DELTA COUNTY

TECHNOLOGY ACTION PLAN

PREPARED BY CONNECT MICHIGAN
AND THE
DELTA COUNTY TECHNOLOGY PLANNING TEAM

MAY 10, 2013
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INTRODUCTION

The purpose of this report is to summarize the community’s assessment of local broadband access, adoption, and use, as well as the best next steps for addressing any deficiencies or opportunities for improving the local technology ecosystem.

Background

Today, technology plays a pivotal role in how businesses operate, the type of service consumers expect, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has also become dependent on how broadly and deeply the community adopts technology resources – this includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan, broadband Internet is “a foundation for economic growth, job creation, global competitiveness and a better way of life.”¹

Despite the growing dependence on technology, as of 2012, 30% of Americans did not have a high-speed connection at home.² Connected Nation’s studies also show that 17 million families with children do not have broadband at home – and 7.6 million of these children live in low-income households. In 2012, Connected Nation also surveyed 7,004 businesses in 9 states. Based on this data, Connected Nation estimates that at least 1.8 million businesses - 24% - in the United States do not utilize broadband technology today.³

Deploying broadband infrastructure, services, and application, as well as supporting the universal adoption and meaningful use of broadband, are challenging - but required - building blocks of a twenty-first century community. To assist communities, Connected Nation developed the Connected Community Engagement Program to help your community identify local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for pursuing solutions.⁴

⁴ Connected Nation, parent company for Connect Michigan, is a national non-profit 501(c)(3) organization that expands access to and use of broadband Internet and the related technologies that are enabled when individuals and communities have the opportunity and desire to connect. Connected Nation works in multiple states to engage community stakeholders, state leaders, and technology providers to develop and implement technology
Methodology

By actively participating in the Connected Community Engagement Program, the Delta County Technology Planning Team is boosting the community’s capabilities in education, healthcare, and public safety, and stimulating economic growth and spurring job creation. The Delta County Technology Planning Team has collaborated with multiple community organizations and residents to:

1. Empower a community team leader (local champion) and create a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries.
2. Identify the community’s technology assets, including local infrastructure, providers, facilities, websites, and innovative uses employed by institutions.
3. Complete the Connected Assessment, a measurement of the community’s access, adoption, and use of broadband based on the recommendations of the National Broadband Plan.
4. Matches gaps in the local broadband ecosystem to solutions and best practices being utilized by communities across the nation.
5. Pursue Connected Certification, a nationally recognized platform for spotlighting communities that excel in the access, adoption, and use of broadband.
The Connected assessment framework is broken into 3 areas: ACCESS, ADOPTION, and USE. Each area has a maximum of 40 points. To achieve Connected Certification, the community must have 32 points in each section and 100 points out of 120 points overall.

The ACCESS focus area checks to see whether the broadband and technology foundation exists for a community. The criteria within the ACCESS focus area endeavors to identify gaps that could affect a local community broadband ecosystem including: last and middle mile issues, cost issues, and competition issues. As noted in the National Broadband Plan, broadband ACCESS “is a foundation for economic growth, job creation, global competitiveness and a better way of life.”

Broadband ADOPTION is important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The ADOPTION component of the Connected Assessment seeks to ensure the ability of all individuals to access and use broadband.

Broadband USE is the most important component of ACCESS, ADOPTION, and USE because it is where the value of broadband can finally be realized. However, without access to broadband and ADOPTION of broadband, meaningful USE of broadband wouldn’t be possible. As defined by the National Broadband Plan (NBP), meaningful USE of broadband includes those areas of economic opportunity, education, government, and healthcare where values to individuals, organizations, and communities can be realized.

Analysis of Connected Assessment
- Delta County achieved a score of 95 points out of 120 for overall broadband and technology readiness.
- The county scored 27 out of a possible 40 points in broadband access, primarily because of some gaps in broadband availability. In Delta County, 87.45% of households have access to 3 Mbps download speeds, compared to the state average of 96.5%.
- A total of 28 points were scored in the broadband adoption section, indicating that the community should increase digital literacy and awareness efforts.
- Delta County has not exceeded the 32 points in each focus area that are required for certification and thus has not qualified for Connected certification.
While the results indicate that the community has made tremendous strides and investments in technology, this technology plan will provide some insight and recommendations that will help the community continue to achieve success.

Community Technology Scorecard

<table>
<thead>
<tr>
<th>FOCUS AREA</th>
<th>ASSESSMENT CRITERIA</th>
<th>COMMUNITY SCORE</th>
<th>MAXIMUM POSSIBLE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCESS</td>
<td>Broadband Availability</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Speeds</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Competition</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Middle Mile Access</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Mobile Broadband Availability</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>TOTAL ACCESS SCORE</td>
<td>27</td>
<td>40</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Digital Literacy</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Public Computer Centers</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Broadband Awareness</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Vulnerable Population Focus</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>TOTAL ADOPTION SCORE</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>USE</td>
<td>Economic Opportunity</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Education</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Government</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Healthcare</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>TOTAL USE SCORE</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>COMMUNITY ASSESSMENT SCORE</td>
<td>95</td>
<td>120</td>
</tr>
</tbody>
</table>

Itemized Key Findings
The Delta County Technology Planning Team identified the following key findings (in addition to findings illustrated in the community scorecard) through its technology assessment:

**ACCESS**
- 12 last-mile broadband providers currently provide service in Delta County:
  - 87.45% of households have access to 3 Mbps.
  - 85.80% of Delta County households have access to at least 100 Mbps service.
  - 72.21% of Delta County households have access to more than 1 provider.
- Middle mile fiber infrastructure is available from multiple providers in Delta County.
- 94.40% of Delta County households have access to mobile broadband.
ADOPTION

- 7 digital literacy programs exist in the community resulting in 74 graduates over the past year.
- 11 Public Computer Centers (PCC) with a total of 160 computers are open to the public.
- 4 broadband awareness campaigns are reaching 40% of Delta County.
- 11 organizations are working with vulnerable populations.

USE

- At least 20 uses of broadband were identified in the area of economic opportunity including 6 advanced uses and 14 basic uses.
- At least 10 uses of broadband were identified in the area of education including 6 advanced uses and 4 basic uses.
- At least 13 uses of broadband were identified in the area of government including 6 advanced uses and 7 basic uses.
- At least 7 uses of broadband were identified in the area of healthcare including 4 advanced uses and 3 basic uses.

In addition to the items identified above, the Delta County Technology Planning Team identified the following technology resources in the community:

Technology Providers

- 12 broadband providers were identified in Delta County
- 3 hardware providers
- 2 network integrators
- 3 web developers
- 5 other providers

Technology Facilities

- 8 public computing centers
- 10 wireless hotspots

Community Websites

- 1 Agriculture-related website
- 5 Business-related websites (excluding private businesses)
- 3 Education-related websites
- 25 Government-related websites
- 2 Healthcare-related websites
- 3 Library-related websites
- 3 Tourism-related websites
Priority Projects
This exercise has culminated in the outlining of projects to allow the community to continue its recognized excellence in technology and broadband planning across the community. Below are six priority projects.

1. Identify, Map, and Validate Broadband Demand
2. Develop a Digital Literacy and Low-Cost Broadband Program
3. Develop a Countywide Technology Awareness Program
4. Develop a Broadband Awareness Program Focused on Agricultural Businesses
5. Host Website and Social Media Classes for Local Businesses
6. Develop a Teleworker Support and Attraction Program

Complete List of Recommended Actions
Below is a complete list of recommended actions. Numbered actions indicate those recommended by Connect Michigan, whereas non-numbered actions indicate those developed by the Delta County Technology Planning Team. Detailed descriptions of each solution proposed by Connect Michigan can be found in the Recommended Actions section later in this report.

ACCESS
Broadband Availability
1. Apply to USDA for Funding Support to Build out Broadband in Community
2. Perform an Analysis of Local Policies and Ordinances

Broadband Speeds – No Recommended Actions

Broadband Competition
3. Develop Public-Private Partnerships to Deploy Broadband Service
4. Study and Possibly Reassess Major Telecom Purchase Contracts

Middle Mile Access – No Recommended Actions

Mobile Broadband Availability
5. Identify and Expand Wireless Hotspots in the Community
6. Identify, Map, and Validate Broadband Demand
7. Complete a Vertical Assets Inventory
8. Perform a Broadband Build-out Analysis in Unserved Areas
**ADOPTION**

**Digital Literacy**
Develop a Digital Literacy and Low-Cost Broadband Program
9. Distribute Digital Literacy Content
10. Establish a “Community Technology Academy”
11. Develop a Technology Mentorship Program
12. Facilitate Internet Safety Classes

**Public Computer Centers** - No Recommended Actions

**Broadband Awareness**
Develop a Broadband Awareness Program Focused on Agricultural Businesses
13. Facilitate a Technology Summit
14. Develop a Countywide Technology Awareness Program

**Vulnerable Population Focus** - No Recommended Actions

**USE**

**Economic Opportunity**
Host Website and Social Media Classes for Local Businesses
Develop a Teleworker Support and Attraction Program
15. Develop or Identify a Broadband Training and Awareness Program for Small and Medium Businesses

**Education**
16. Improve Education through Digital Learning

**Government**
17. Improve Online Business Services Offered by the Government
18. Pursue Next Generation 911 Upgrades

**Healthcare**
19. Promote Telemedicine in Remote Areas
Detailed Findings

Current Community Technology Developments in Delta County

During the assessment process, the community team identified projects that are currently in development or implementation. These projects are helping to enhance technology in Delta County:

- Whitetail Industrial Park in Escanaba received $94,000 from the state to upgrade to broadband Internet service following the governor’s signature on Public Act 296 of 2012 on Aug. 1. The state will provide the funding as a grant to the city of Escanaba.
- Wireless service has been offered in downtown Escanaba since 2002. Free service within the DDA district was launched in January of 2010 in partnership with the City of Escanaba and DSTech of Escanaba creating a downtown wireless network.
- Charter Communications has upgraded its cable network in Delta County and is now offering broadband service up to 100 Mbps download speeds and 5 Mbps upload speeds to its subscribers.
- On October 3, 2012, Merit Network Inc. announced the installation of the first telecommunications hut as part of the REACH-3MC II broadband stimulus project. The hut was successfully deployed on the campus of Bay de Noc Community College.
- The Michigan Technical Education Center (M-TEC), located on the campus of Bay de Noc Community College, offers a wide variety of workshops and seminars open to the public. These non-credit workshops are designed to assist employers and incumbent workers to improve capabilities through job-related training and professional growth opportunities. An example of those courses is Adult Learner Computer Basics and Fundamentals of QuickBooks Software.
- Escanaba Public Schools have purchased 276 iPads and has created three labs containing 30 iPads each.
- Bark River Public Schools have purchased 100 iPads and has created two labs containing 30 iPads each.
- The Garden Wind Farm in Garden Township of Delta County, Michigan, is the first wind energy generating facility in the Upper Peninsula. It consists of 14 – 2 megawatt wind turbines, for a total installed generation capacity of 28 megawatts (MW). The wind farm became fully operational in September of 2012. Over an annual period, the wind farm is anticipated to generate in excess of 70,000 megawatt hours of renewable, clean electricity. This is equivalent to the amount of energy needed to power nearly 7,000 average households (almost 50% of Delta County’s households).
- The Garden Peninsula Economic Task Force will be administering a broadband survey in order to better understand existing and potential markets for broadband subscribers.
The recently created U.P. Food Exchange (UPFE) connects local food activity within each of the Upper Peninsula's three distinct regions (eastern, central, and western), and coordinates local food efforts between the regions. This project aims to establish both online and physical aggregation sites for farm products, improve local food storage capacity, and educate consumers, farmers, and institutional purchasers about the resources and benefits available to them via this network. The resources required for this project fall into three categories: infrastructure improvement costs, technology integration, and personnel. The results of this project will affect local agriculture throughout the U.P., as evidenced by an increase in the number of farmers listing their products through the online network, an increase in the number of farmers listing their farms in the U.P. Food & Farm Directory, and an increase in the farm products moving between the regions. UPFE will create and/or formally designate a food aggregation site in each of the three regions of the U.P.; Eastern, Central & West in order to provide each region with the resources needed to establish operational activities that will respond to the developing food needs of each region, as well as create an umbrella entity to tie each of the three regions' activities together in a synergistic network.

The UP 9-1-1 Authority is responsible for coordinating and providing a variety of services with respect to 911 emergency call answering and service dispatching across Michigan's Upper Peninsula. For more information, visit [www.upcap.org](http://www.upcap.org).

The Upper Peninsula Regional office for the USDA is located in Gladstone, and Connected Nation affiliates have a great relationship with the local staff.
Delta County Assessment Findings

Residents of Delta County (or sections of the community) are served by 12 providers. Currently, broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream. According to Connect Michigan’s latest broadband mapping update, the following providers have a service footprint in the Delta County Community:

<table>
<thead>
<tr>
<th>Broadband Providers</th>
<th>Technology Type</th>
<th>Website Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphacomm.net</td>
<td>DSL</td>
<td><a href="http://alphacomm.net">http://alphacomm.net</a></td>
</tr>
<tr>
<td>AT&amp;T Michigan</td>
<td>DSL</td>
<td><a href="http://www.att.com">www.att.com</a></td>
</tr>
<tr>
<td>CenturyLink</td>
<td>DSL</td>
<td><a href="http://www.centurylink.com">www.centurylink.com</a></td>
</tr>
<tr>
<td>Charter Communications, Inc.</td>
<td>Cable</td>
<td><a href="http://www.charter.com">www.charter.com</a></td>
</tr>
<tr>
<td>Hughes Network Systems, LLC</td>
<td>Satellite</td>
<td><a href="http://www.hughesnet.com">www.hughesnet.com</a></td>
</tr>
<tr>
<td>jamadots</td>
<td>DSL</td>
<td><a href="http://www.jamadots.com">www.jamadots.com</a></td>
</tr>
<tr>
<td>Pasty.net</td>
<td>Fixed Wireless</td>
<td><a href="http://www.pasty.net">www.pasty.net</a></td>
</tr>
<tr>
<td>StarBand Communications</td>
<td>Satellite</td>
<td><a href="http://www.starband.com">www.starband.com</a></td>
</tr>
<tr>
<td>TDS Telecom</td>
<td>DSL</td>
<td><a href="http://www.tdstelecom.com">www.tdstelecom.com</a></td>
</tr>
<tr>
<td>U.P. Logon</td>
<td>Fixed Wireless</td>
<td><a href="http://uplogon.com">http://uplogon.com</a></td>
</tr>
<tr>
<td>Verizon Wireless</td>
<td>Mobile Wireless</td>
<td><a href="http://www.verizonwireless.com">www.verizonwireless.com</a></td>
</tr>
<tr>
<td>ViaSat, Inc.</td>
<td>Satellite</td>
<td><a href="http://www.exede.com">www.exede.com</a></td>
</tr>
</tbody>
</table>

Below is a list of community websites (sorted by category) designed to share and promote local resources.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Website</th>
<th>Website Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.P. Food Exchange (UPFE)</td>
<td><a href="http://marquettefood.coop">http://marquettefood.coop</a></td>
<td>Agriculture</td>
</tr>
<tr>
<td>Delta County Economic Development Alliance</td>
<td><a href="http://www.deltaeda.org">www.deltaeda.org</a></td>
<td>Business</td>
</tr>
<tr>
<td>Delta Chamber of Commerce</td>
<td><a href="http://www.deltami.org">www.deltami.org</a></td>
<td>Business</td>
</tr>
<tr>
<td>Escanaba Downtown Development Authority</td>
<td><a href="http://escanabadda.org">http://escanabadda.org</a></td>
<td>Business</td>
</tr>
<tr>
<td>Delta Green Aerospace and Marine Integrator Cluster</td>
<td><a href="http://www.deltagreen.pro">www.deltagreen.pro</a></td>
<td>Business</td>
</tr>
<tr>
<td>Michigan Small Business Technology Development Center</td>
<td><a href="http://www.jobforce.org/sbtdc.html">www.jobforce.org/sbtdc.html</a></td>
<td>Business</td>
</tr>
<tr>
<td>Bay College Computer Center</td>
<td><a href="http://www.baycollege.edu/Students/Computing-Center.aspx">www.baycollege.edu/Students/Computing-Center.aspx</a></td>
<td>Education</td>
</tr>
<tr>
<td>Delta-Schoolcraft Intermediate</td>
<td><a href="http://www.dsisd.k12.mi.us/dsisd.htm">www.dsisd.k12.mi.us/dsisd.htm</a></td>
<td>Education</td>
</tr>
<tr>
<td>School District</td>
<td>Website</td>
<td>Entity Type</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>Delta County Government</td>
<td><a href="http://www.deltacountymi.org">www.deltacountymi.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Bark River Township</td>
<td><a href="http://www.deltacountymi.org/pages.php?ID=45">www.deltacountymi.org/pages.php?ID=45</a></td>
<td>Government</td>
</tr>
<tr>
<td>Escanaba Township</td>
<td><a href="http://www.escanabatownship.org/">www.escanabatownship.org/</a></td>
<td>Government</td>
</tr>
<tr>
<td>Fairbanks Township</td>
<td><a href="http://www.deltacountymi.org/pages.php?ID=54">www.deltacountymi.org/pages.php?ID=54</a></td>
<td>Government</td>
</tr>
<tr>
<td>Nahma Township</td>
<td><a href="http://www.nahmatownship.us">www.nahmatownship.us</a></td>
<td>Government</td>
</tr>
<tr>
<td>City of Escanaba</td>
<td><a href="http://escanaba.org">http://escanaba.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>City of Gladstone</td>
<td><a href="http://www.gladstonemi.org">www.gladstonemi.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Escanaba Civic Center</td>
<td><a href="http://www.escanaba.org/?civiccenter">www.escanaba.org/?civiccenter</a></td>
<td>Government</td>
</tr>
<tr>
<td>Escanaba Civic Center Senior Center</td>
<td><a href="http://www.escanaba.org/?recreation">www.escanaba.org/?recreation</a></td>
<td>Government</td>
</tr>
<tr>
<td>Hannahville Youth Services</td>
<td><a href="http://www.youthservices.hannahville.net">www.youthservices.hannahville.net</a></td>
<td>Government</td>
</tr>
<tr>
<td>Central Upper Peninsula Planning &amp; Development Regional Commission</td>
<td><a href="http://www.cuppad.org">www.cuppad.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Community Foundation</td>
<td><a href="http://www.cfup.org">www.cfup.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Upper Peninsula Commission for Area Progress (UPPCAP)</td>
<td><a href="http://www.upcap.org">www.upcap.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>United Way of Delta County</td>
<td><a href="http://uwdelta.org">http://uwdelta.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>Michigan Works</td>
<td><a href="http://www.jobforce.org">www.jobforce.org</a></td>
<td>Government</td>
</tr>
<tr>
<td>PTAC (Federal Procurement Technical Assistance Center)</td>
<td><a href="http://www.jobforce.org/ptac.html">www.jobforce.org/ptac.html</a></td>
<td>Government</td>
</tr>
<tr>
<td>OSF St. Francis Hospital</td>
<td><a href="http://www.osfstfrancis.org">www.osfstfrancis.org</a></td>
<td>Healthcare</td>
</tr>
<tr>
<td>Public Health, Delta &amp; Menominee Counties</td>
<td><a href="http://www.phdm.org">www.phdm.org</a></td>
<td>Healthcare</td>
</tr>
<tr>
<td>Escanaba Public Library</td>
<td><a href="http://www.escanabalibrary.org">www.escanabalibrary.org</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>Bay College Library</td>
<td><a href="http://library.baycollege.edu/home">http://library.baycollege.edu/home</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>Gladstone Library</td>
<td><a href="http://www.gladstoneschools.com/library/Main%20Library.htm">www.gladstoneschools.com/library/Main%20Library.htm</a></td>
<td>Libraries</td>
</tr>
<tr>
<td>Bays De Noc Convention &amp; Visitors Bureau</td>
<td><a href="http://www.travelbaysdenoc.com">www.travelbaysdenoc.com</a></td>
<td>Tourism</td>
</tr>
<tr>
<td>The Bonifas Arts Center</td>
<td><a href="http://bonifasarts.org">http://bonifasarts.org</a></td>
<td>Tourism</td>
</tr>
<tr>
<td>Delta County Historical Society</td>
<td><a href="http://deltahistorical.org">http://deltahistorical.org</a></td>
<td>Tourism</td>
</tr>
</tbody>
</table>
Below is a list of local technology companies that are providing technical services or distributing/selling technical resources.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Website</th>
<th>Provider Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.P. PC Repair</td>
<td><a href="http://www.upcars.com/uppcrepair/">www.upcars.com/uppcrepair/</a></td>
<td>Hardware Provider</td>
</tr>
<tr>
<td>Staples</td>
<td><a href="http://www.mystore411.com/store/view/10515/Staples-Escanaba">www.mystore411.com/store/view/10515/Staples-Escanaba</a></td>
<td>Hardware Provider</td>
</tr>
<tr>
<td>DSTECH</td>
<td><a href="http://www.dstech.us">www.dstech.us</a></td>
<td>Network Integrator</td>
</tr>
<tr>
<td>Charter Communications</td>
<td><a href="http://www.charter.net">www.charter.net</a></td>
<td>Network Integrator</td>
</tr>
<tr>
<td>Merit</td>
<td><a href="http://www.mystore411.com/store/view/10515/Staples-Escanaba">www.mystore411.com/store/view/10515/Staples-Escanaba</a></td>
<td>Other</td>
</tr>
<tr>
<td>Great Lakes Comnet</td>
<td><a href="http://www.glcom.net">www.glcom.net</a></td>
<td>Other</td>
</tr>
<tr>
<td>Lynx Network Group</td>
<td><a href="http://www.lynxnetworkgroup.com">www.lynxnetworkgroup.com</a></td>
<td>Other</td>
</tr>
<tr>
<td>Peninsula Fiber Network</td>
<td><a href="http://www.pfnllc.net">www.pfnllc.net</a></td>
<td>Other</td>
</tr>
<tr>
<td>Big Bay Broadband Inc.</td>
<td><a href="http://www.bbbmi.com">www.bbbmi.com</a></td>
<td>Other</td>
</tr>
<tr>
<td>BluePX Media</td>
<td><a href="http://www.bluepx.com">www.bluepx.com</a></td>
<td>Web Developer</td>
</tr>
</tbody>
</table>

Below is a list of organizations that are making technological resources available to the community. These include organizations that provide videoconferencing, public computing, and wireless hotspots.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Resource Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escanaba Public Library</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Escanaba Civic Center</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Bay College Library</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Bay College Computer Center</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Escanaba Civic Center Senior Center</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Gladstone Library</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Gladstone Senior Center</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>Hannahville Youth Services</td>
<td>Public Computer Facility</td>
</tr>
<tr>
<td>ATT Retail Store DBID# 126827</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Comfort Suites</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Econo Lodge - Escanaba (MI160)</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>McDonald’s 17141</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>McDonald’s 02469</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>Staples</td>
<td>Wireless Hotspot</td>
</tr>
<tr>
<td>City of Escanaba Downtown Development Authority</td>
<td>Wireless Hotspot</td>
</tr>
</tbody>
</table>
Connected Assessment Summary

Community Technology Scorecard
Community Champion: Vicki Schwab and Suani Nieto
Community Advisor: Tom Stephenson

<table>
<thead>
<tr>
<th>FOCUS AREA</th>
<th>ASSESSMENT CRITERIA</th>
<th>COMMUNITY SCORE</th>
<th>MAXIMUM POSSIBLE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCESS</td>
<td>Broadband Availability</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Speeds</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Broadband Competition</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Middle Mile Access</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Mobile Broadband Availability</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>ACCESS</td>
<td><strong>TOTAL ACCESS SCORE</strong></td>
<td><strong>27</strong></td>
<td><strong>40</strong></td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Digital Literacy</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Public Computer Centers</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Broadband Awareness</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td>Vulnerable Population Focus</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ADOPTION</td>
<td><strong>TOTAL ADOPTION SCORE</strong></td>
<td><strong>28</strong></td>
<td><strong>40</strong></td>
</tr>
<tr>
<td>USE</td>
<td>Economic Opportunity</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Education</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Government</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td>Healthcare</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>USE</td>
<td><strong>TOTAL USE SCORE</strong></td>
<td><strong>40</strong></td>
<td><strong>40</strong></td>
</tr>
<tr>
<td></td>
<td><strong>COMMUNITY ASSESSMENT SCORE</strong></td>
<td><strong>95</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

**ACCESS Score Breakdown**

Broadband Availability (4 out of 10 Points Possible) – is measured by analyzing provider availability of 3 Mbps broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.
According to the October 2012 data collected by Connect Michigan, 87.45% of Delta County residents had access to broadband speeds of 3 Mbps or greater.

**Broadband Speeds** *(5 out of 5 Points Possible)* – is measured by analyzing the speed tiers available within a community. Connected Nation will analyze broadband data submitted through its broadband mapping program. Specifically, Connected Nation will break down the coverage by the highest speed tier with at least 75% of households covered. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

According to the October 2012 data collected by Connect Michigan, 85.80% of Delta County residents had access to broadband speeds of 100 Mbps.

**Broadband Competition** *(2 out of 5 Points Possible)* – is measured by analyzing the number of broadband providers available in a particular community and the percentage of that community’s residents with more than one broadband provider available. Connected Nation performed this analysis by reviewing the data collected through the broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

According to the October 2012 data collected by Connect Michigan, 72.21% of Delta County residents had access to more than one broadband provider.

**Middle Mile Access** *(10 out of 10 Points Possible)* – is measured based on a community’s availability to fiber. Three aspects of availability exist: proximity to middle mile points of presence (POPs), number of POPs available, and available bandwidth. Data were collected by the community in coordination with Connected Nation.

Delta County is served by 2 or more middle mile fiber providers.

**Mobile Broadband Availability** *(6 out of 10 Points Possible)* – is measured by analyzing provider availability of mobile broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have mobile broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

According to the October 2012 data collected by Connect Michigan, 94.40% of Delta County residents had access to mobile broadband service.
ADOPTION Score Breakdown

Digital Literacy (4 out of 10 Points Possible) – is measured by first identifying all digital literacy programs in the community. Once the programs are determined, a calculation of program graduates will be made on a per capita basis. A digital literacy program includes any digital literacy course offered for free or at very low cost through a library, seniors center, community college, K-12 school, or other group serving the local community. A graduate is a person who has completed the curriculum offered by any organization within the community. The duration of individual courses may vary. A listing of identified digital literacy offerings is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Program Description</th>
<th>Number of Grads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Works</td>
<td>International Computer Driving License (ICDL)</td>
<td>10</td>
</tr>
<tr>
<td>Escanaba Public Library</td>
<td>Basic Computer Skills Classes</td>
<td>6</td>
</tr>
<tr>
<td>Escanaba Public Library</td>
<td>Internet and Email Classes</td>
<td>6</td>
</tr>
<tr>
<td>Escanaba Public Library</td>
<td>E-reader Assistance</td>
<td>13</td>
</tr>
<tr>
<td>Escanaba Public Library</td>
<td>Library Digital Resources</td>
<td>13</td>
</tr>
<tr>
<td>Delta Force 2012 Chamber</td>
<td>Leadership program/Media Day</td>
<td>23</td>
</tr>
<tr>
<td>Bay Pines</td>
<td>Youth Detention/High school graduates</td>
<td>3</td>
</tr>
<tr>
<td>Michigan Works</td>
<td>International Computer Driving License (ICDL)</td>
<td>10</td>
</tr>
</tbody>
</table>

Public Computer Centers (10 out of 10 Points Possible) – is measured based on the number of hours computers are available each week per 1,000 low-income residents. Available computer hours is calculated by taking the overall number of computers multiplied by the number of hours open to a community during the course of the week. A listing of public computer centers available in Delta County is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Number of Open Hours per Week</th>
<th>Number of Computers</th>
<th>Available Computer Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escanaba Public Library</td>
<td>54</td>
<td>18</td>
<td>972</td>
</tr>
<tr>
<td>Escanaba Civic Center</td>
<td>42</td>
<td>3</td>
<td>126</td>
</tr>
<tr>
<td>Escanaba Public Library Laptops</td>
<td>54</td>
<td>5</td>
<td>270</td>
</tr>
<tr>
<td>Bay College Library</td>
<td>56.5</td>
<td>14</td>
<td>791</td>
</tr>
<tr>
<td>Gladstone Library</td>
<td>53.5</td>
<td>17</td>
<td>909.5</td>
</tr>
<tr>
<td>Gladstone Library Laptops</td>
<td>53.5</td>
<td>5</td>
<td>267.5</td>
</tr>
<tr>
<td>Hannahville Youth Services</td>
<td>60</td>
<td>40</td>
<td>2400</td>
</tr>
</tbody>
</table>
Bay College Computer Center | 67 | 30 | 2010
Gladstone Senior Center | 35 | 1 | 35
Escanaba Civic Center Senior Center | 35 | 3 | 105
Big Bay de Noc School Library | 10 | 14 | 140

**Broadband Awareness** (4 out of 10 Points Possible) – is measured based on the percentage of the population reached. All community broadband awareness programs are first identified, and then each program’s community reach is compiled and combined with other campaigns. A listing of broadband awareness programs in Delta County is below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Campaign Description</th>
<th>Community Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hannahville Community</td>
<td>E-newsletter</td>
<td>10%</td>
</tr>
<tr>
<td>Merit Network, Inc.</td>
<td>Merit Network, Inc. is a nonprofit, member-owned organization formed in 1966 to design and implement a computer network between non-profits</td>
<td>10%</td>
</tr>
<tr>
<td>MSU Extension</td>
<td>Upper Peninsula Research Center Ag Connection Newsletter</td>
<td>18%</td>
</tr>
<tr>
<td>Delta County Chamber of Commerce</td>
<td>E-Newsletter</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Vulnerable Population Focus** (10 out of 10 Points Possible) – A community tallies each program or ability within the community to encourage technology adoption among vulnerable groups. Methods of focusing on vulnerable groups may vary, but explicitly encourage technology use among vulnerable groups. Example opportunities include offering online GED classes, English as a Second Language (ESL) classes, video-based applications for the deaf, homework assistance for students, and job-finding assistance. Communities receive points for each group on which they focus. Groups may vary by community, but include low-income, minority, senior, children, etc. A listing of programs focusing on vulnerable populations in Delta County is listed below.

<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Program Description</th>
<th>Vulnerable Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Works</td>
<td>JET: The JET program consists of activities designed to help families move toward financial independence.</td>
<td>Low-Income Population</td>
</tr>
<tr>
<td>Michigan Works</td>
<td>JAG-Job for American Graduates is committed to preparing our future workforce for success and offers a dropout prevention program.</td>
<td>Low-Income Population</td>
</tr>
<tr>
<td>Michigan Works</td>
<td>The Workforce Investment Act (WIA) Adult Program provides workforce investment activities</td>
<td>Low-Income Population</td>
</tr>
<tr>
<td>Application Provider</td>
<td>Description</td>
<td>Basic / Advanced</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Delta County Chamber of Commerce</td>
<td>75% of local attractions online</td>
<td>Basic</td>
</tr>
<tr>
<td>EDA Website/Location One</td>
<td>Provides all available commercial properties online</td>
<td>Basic</td>
</tr>
<tr>
<td>MiWorks</td>
<td>Availability of 30-computer lab for job search and business training</td>
<td>Basic</td>
</tr>
<tr>
<td>Michigan University Extension</td>
<td>Availability of agriculture and farming information online</td>
<td>Basic</td>
</tr>
<tr>
<td>Michigan Works/Pure Michigan</td>
<td>Presence of program to provide virtual employment assistance programs and individualized job training</td>
<td>Advanced</td>
</tr>
<tr>
<td>Northern Initiatives</td>
<td>Web Opportunities for small businesses</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

**Economic Opportunity** (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within economic opportunity include: economic development, business development, tourism, and agriculture. Identified uses of broadband in the area of economic opportunity are listed below and identified as basic or advanced.

**USE Score Breakdown**
<table>
<thead>
<tr>
<th>Application Provider</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity of public school classrooms</td>
<td>100% of classrooms in the five public school districts located in Delta Schoolcraft Intermediate School District (DSISD) (Escanaba, Bark River, Gladstone, Mid-Pen,</td>
<td>Basic</td>
</tr>
</tbody>
</table>

**Education** (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within education include K-12, higher education, and libraries. Identified uses of broadband in the area of education are listed below and identified as basic or advanced.
<table>
<thead>
<tr>
<th>Connectivity of public school libraries</th>
<th>Rapid River, Big Bay, Manistique) are connected to Internet via broadband</th>
<th>Basic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public school library automation system</td>
<td>100% of school libraries in the seven public school districts located in DSISD are connected to Internet via broadband</td>
<td>Basic</td>
</tr>
<tr>
<td>Online access to school curricula, homework, &amp; grades</td>
<td>100% of K-12 classes in the seven public school districts located in DSISD have automated library systems</td>
<td>Advanced</td>
</tr>
<tr>
<td>Online interaction between school and parent</td>
<td>100% of the seven public school districts located in DSISD interact online with parents through Power School, a student management system, through email, both mass and select individual</td>
<td>Advanced</td>
</tr>
<tr>
<td>Availability of online courses for K-12 students</td>
<td>100% of the seven public school districts located in DSISD offer a variety of online courses for students including: Accelerated Reader, Star Reader, Atomic Learning, Compass Learning, Read Naturally, Michigan Virtual High School and College, and Kahn Academy</td>
<td>Advanced</td>
</tr>
<tr>
<td>Initiatives focused on elevating STEM (Science, Technology, Engineering, &amp; Mathematics) literacy</td>
<td>The school districts located in DSISD are partners with the Michigan STEM Partnership, a statewide collaboration of leaders from PK–20 education as well as business and industry, philanthropy, economic development, government, military, and other organizations dedicated to elevating STEM literacy in order to increase Michigan’s economic strength to retain and attract desirable jobs. The districts are represented through the Great Lakes Math &amp; Science Center, a subdivision of the Delta-Schoolcraft Intermediate School District</td>
<td>Advanced</td>
</tr>
<tr>
<td>Student and teacher training programs focused on improving STEM (Science, Technology, Engineering, &amp; Mathematics) education</td>
<td>100% of the school districts located in DSISD have access to various in-county student programs and teacher training related to STEM available through DSISD Math &amp; Science Center, Michigan Math &amp; Science Center Network, and others</td>
<td>Basic</td>
</tr>
<tr>
<td>Bark River iPad labs</td>
<td>2 iPad labs-100 iPads available to teachers and student body</td>
<td>Advanced</td>
</tr>
<tr>
<td>Escanaba 276 iPads</td>
<td>3 labs 32 iPads each. 276 iPads available for students and teachers</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

**Government (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within government
include general government, public safety, energy, and the environment. Identified uses of broadband in the area of government are listed below and identified as basic or advanced.

<table>
<thead>
<tr>
<th>Application Provider</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta County Government</td>
<td>Majority of local governments with websites</td>
<td>Basic</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>Delta County BSCATax and assessing information on website</td>
<td>Advanced</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>Presence of mobile government applications-Michigan Department of Transportation computer access in squad cars</td>
<td>Advanced</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>50% of essential government services online</td>
<td>Advanced</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>Mobile phone friendly county website</td>
<td>Basic</td>
</tr>
<tr>
<td>Delta County Government/United Law Enforcement</td>
<td>Local agency records on Michigan Department of Transportation</td>
<td>Advanced</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>Dashboard/Transparency Plan focused on adding more resources online</td>
<td>Basic</td>
</tr>
<tr>
<td>Delta County Government</td>
<td>Plan focused on UP wide connection</td>
<td>Advanced</td>
</tr>
<tr>
<td>City of Escanaba</td>
<td>50% of essential government services online, including ability to check Assessing and Taxes Online</td>
<td>Advanced</td>
</tr>
<tr>
<td>City of Escanaba</td>
<td>Social media use-Minutes/Agenda on Facebook/Twitter</td>
<td>Basic</td>
</tr>
<tr>
<td>City of Escanaba</td>
<td>Ability to pay utilities online</td>
<td>Basic</td>
</tr>
<tr>
<td>City of Escanaba GIS Project</td>
<td>Ability to acquire GIS information on city website</td>
<td>Basic</td>
</tr>
<tr>
<td>All Delta County Governments</td>
<td>Joint Government Meetings connect through electronic tools. Meetings/All E-communication</td>
<td>Basic</td>
</tr>
</tbody>
</table>

Healthcare (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Entities within healthcare can include, but are not limited to, hospitals, medical and dental clinics, health departments, nursing homes, assisted living facilities, and pharmacies. Identified uses of broadband in the area of healthcare are listed below and identified as basic or advanced.

<table>
<thead>
<tr>
<th>Application Name</th>
<th>Description</th>
<th>Basic/Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSF My Health</td>
<td>Online listing of healthcare professionals within community</td>
<td>Basic</td>
</tr>
<tr>
<td>OSF My Health</td>
<td>Online Patient information/communication between doctor</td>
<td>Advanced</td>
</tr>
<tr>
<td>Organization</td>
<td>Description</td>
<td>Level</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>OSF My Health</td>
<td>Feta Infant Monitoring - Doctor access to monitor info about delivering moms</td>
<td>Advanced</td>
</tr>
<tr>
<td>OSF My Health</td>
<td>80% of doctors using e-Health</td>
<td>Advanced</td>
</tr>
<tr>
<td>OSF My Health/EMR system</td>
<td>Using EPIC Medical Record software for electronic medical records</td>
<td>Basic</td>
</tr>
<tr>
<td>OSF My Health</td>
<td>80% of doctors with adequate bandwidth (based on NBP standard). Expected 100% of physicians to meet standards by 2013</td>
<td>Advanced</td>
</tr>
<tr>
<td>Public Health Delta Menominee Counties</td>
<td>Public health online listings of community health promotions such as; the WISEWOMAN program aims to reduce cardiovascular disease (CVD) risk factors in under or uninsured women ages 40-64 through healthy lifestyle changes, smoke-free UP, bathing beach information</td>
<td>Basic</td>
</tr>
</tbody>
</table>
**Priority Projects**

This exercise has culminated in the outlining of projects to allow Delta County to continue its recognized excellence in technology and broadband planning across the community. Through the course of the assessment process, a number of key observations were made by members of the team:

1. The Delta County Area Literacy Council has stated that by 2014 all GED testing will be done online.
2. Bay De Noc College and Escanaba Public Library are the only organizations in Delta County that are offering digital literacy training for adults and seniors.
3. Most of the agricultural businesses in Delta County have either limited access or no access to broadband.
4. A large number of businesses in Delta County do not have websites or use other social media functions to promote their business.

Listed below are six priority projects, each describing a project plan with suggested steps for action.

**Access – Broadband Availability**

**Identify, Map, and Validate Broadband Demand**

Develop a team to conduct research surveys and market analyses to validate a business case. A market analysis includes research on the existing and potential service offerings and the respective rates to determine the levels of interest in the services and rate plans offered by the client. The team should provide accurate, timely, and thorough solutions, accompanied by personalized service to meet the needs of communities or broadband providers.

**Goals:**

- Understand existing and potential markets for broadband subscribers (both residential and business).
- Several members of the Delta County Technology Planning Team are working with the Garden Peninsula Economic Task Force and will be administering a broadband survey in order to better understand existing and potential markets for broadband subscribers in Garden Township. It has been determined by the team to expand the scope of the survey to include all of Delta County in order to increase access to broadband in the unserved areas of Delta County.
- Identify funding sources to support broadband build-out in the community, and create funding ready templates for response.

**Benefits**
- Enables the ability to better understand the key drivers of the broadband market.
- Validates the business case for network build-out and capacity investment.

**Action Items**
1. The project team should be prepared to provide research project design, data collection services, data analysis and reporting, and presentation development and delivery.
2. Work with the members of the Delta County Technology Planning Team to develop a marketing survey and methods of implementation utilizing best practice plans and survey samples from other communities participating in the Connect Michigan Connected Community Engagement Program.
   a. Survey mailing samples from the Charlevoix County and Oscoda County teams are readily available and currently loaded on the web portals of Delta County located on the Connect Michigan website: [www.connectmi.org](http://www.connectmi.org)
   b. A sample of a press release is also loaded on the web portal of Delta County.
3. The project team should then tabulate the data. The survey results can be placed on a public website for review by all the broadband providers who provide broadband service in Delta County. A best practice sample of similar survey results tabulated by the HARBOR Inc. Broadband Committee can be found on their website: [http://www.harborinc.org/broadband.asp](http://www.harborinc.org/broadband.asp).

**Implementation Team:** A committee comprised of the Delta County Technology Planning Team and other volunteers from outside the team is currently developing a marketing survey and methods of implementation.

**Adoption – Digital Literacy**

**Develop a Digital Literacy and Low-Cost Broadband Program**
Create a partnership between libraries, school systems, computer suppliers, and broadband providers to provide free training and discounted computers and broadband service to low-income community members who are not participating in the digital age. An example of such a program is Connected Nation’s Every Community Online program (ECO). This is an innovative program that is providing free digital literacy training, access to low-cost computers, and discounted broadband access to communities across the country.

ECO is based on five core innovative principles:
1. Bridging the digital divide by enabling underprivileged individuals with access to affordable computers offers true broadband performance and experience.
2. Introducing individuals to the Internet and abundant global resources that allow them to compete in the global economy.
3. Addressing a major barrier to computer ownership – computer affordability. Cost is cited as the main barrier to computer ownership by 43% of adults with incomes less than $25K annually and 44% of households with total incomes less than $25K cited.
4. Addressing a major barrier to broadband adoption – broadband affordability. [1] Cost is cited as the main barrier to broadband adoption by 43% of adults with incomes less than $25K annually and 44% of households with total income less than $25K.
5. Increasing awareness of the importance of computer ownership and use through training about essential online applications.

Goals:
1. Increasing technology adoption – Bridging the digital divide by providing free digital literacy training and access to reduced-cost computers and discounted broadband.
2. Increasing technology use – Introducing meaningful applications that improve lives through technology.

Action Items:
1. Create a partnership with local non-profits (libraries, community centers, schools, etc.) to help promote the program locally; offer a facility where individuals can participate in the self-paced training or in-person training.
2. If ECO does not have participating provider in local community, reach out to local providers to participate in the program.
3. Work with local media to promote ECO PSAs, ads, etc.
4. Seek support of local leadership.

Implementation Team: To be determined.

Adoption – Broadband Awareness

Develop a Countywide Technology Awareness Program
The vision of the Delta County Technology Planning Team is to create and sustain an educated community that can compete in today’s global economy. Its mission is to leverage existing resources, expand and enhance workforce-training programs, offer more community education, encourage more post-secondary education, and create additional awareness within Delta County with regard to technology and broadband. Technology will be expanded within each sector of the community: agriculture, business and industry, community-based organizations, government, healthcare, higher education, K-12 education, libraries and tourism,

[1] This is subject to availability of a participating provider in local community.
parks and recreation. Awareness will be created to include the many available digital applications that deliver convenience, growth, productivity, and empowerment.

Goals:
1. Adopt an integrated approach to the organization, promotion, and delivery of technology education, training, and awareness for the community.
2. Implement training for security education.
3. Increase citizen usage of computers and the Internet.
4. Put together a media campaign to highlight the benefits of broadband technology.
5. Show marked improvement in basic computer skills and knowledge levels for residents.

Action Items:
1. Identify all organizations and related courses within Delta County currently offering community education, training, and awareness.
2. Divide the current resources offered by these organizations into categories: education, training, security and awareness; classify them by the sectors that they benefit.
3. Create a media campaign to help consumers and businesses understand the benefits of high-speed services and the Internet.
4. Create new ways to market and promote opportunities to appropriate groups within the community.
5. Determine the areas that are lagging in education/training/awareness and identify appropriate community courses and materials needed to fill those gaps.

Implementation Team: To be determined.

Use – Economic Opportunity

Develop a Broadband Awareness Program Focused on Agricultural Businesses
The agricultural sector has access to a unique set of broadband-enabled tools that should be effectively and efficiently communicated via education and demonstration. Broadband awareness efforts should focus on education that leads to initial adoption, full utilization of available applications, and knowledge of technology trends as they relate to the agricultural sector.

In the agricultural sector, broadband can reduce the costs of interaction between remote market participants; provide real-time access to information relevant for both production and marketing decisions; speed access to accurate and current weather and pricing information for inputs and outputs; and facilitate farm management. When utilized to its fullest extent, broadband can result in a reduction of costs and an increase in revenue, ultimately leading to higher profits and a stronger agricultural sector.
A significant feature of the Internet, and one unique to each community’s agricultural ecosystem, is its capacity to provide information quickly and cheaply compared to other dissemination methods, which increases the efficiency of communication, information sourcing, and transactions, and allows for data-driven decision making. Further, new “cloud” based technologies enable producers to better manage various aspects of their operations, from managing inventory, to monitoring yields, chemical applications, weather, and markets.

Goal:
Promote broadband as an effective, low-cost tool for reducing costs and increasing competitiveness.

Action Items:
- *Identify funding opportunities for hardware and service delivery:* Opportunities provided by the USDA, university and extension offices, the state department of agriculture, and other relevant organizations should be investigated and promoted.
- *Develop a broadband education campaign targeting the agricultural sector:* Utilizing traditional marketing methods, partner with local organizations to develop a campaign to educate the agriculture sector on the benefits of broadband.
- *Generate a local network of agricultural organizations and individuals who can communicate and promote the “what, why, and how” of broadband adoption and use:* Utilize this network to initiate public meetings to discuss how broadband-enabled tools can best be utilized to benefit Delta County’s agriculture sector.

Use — Economic Opportunity

**Host Website and Social Media Classes for Local Businesses**

For small businesses, an online presence and the use of social media are vital to stay competitive in today’s twenty-first century. A website and social media use is not just for companies that have the experience, staff, or budget; any small business can tap into these resources. Training should be provided to small businesses regarding the use of websites and social media within each small business. Website topics should range from starting a basic website to more advanced topics such as e-commerce. Social media topics should include a variety of social media outlets including Facebook, Twitter, YouTube, Pinterest, and LinkedIn. For many business owners, the belief that broadband would not help their business, or the lack of knowledge about how broadband positively effects business development, are the main reasons that they do not adopt broadband service. Many believe that since they have always operated without broadband, they can continue to do so. Communicating how businesses can achieve significant results via the utilization of broadband and broadband-enabled business tools is important to overcoming the barriers of relevance and lack of awareness. The key to this communication is providing local examples of successful broadband utilization and facilitating collaboration and cooperation among businesses and technology and service providers.
Broadband adoption should not be the end goal for an awareness program. New technology platforms continue to emerge, software and hardware evolve, and website, media, and online customer engagement methods continue to change, which can complicate adoption or leave businesses with outdated technology infrastructure and ineffective marketing strategies. An awareness program should promote the benefits of broadband, offer education and training, and provide assistance with follow-up questions and concerns. Thus, it is important to have a support network of businesses and community organizations that can assist each other with adoption and the continued use of technology.

**Goals:**

1. Promote the adoption and use of broadband and broadband-enabled tools among businesses in Delta County via awareness-building and training.
2. Build awareness of the benefits associated with the adoption of broadband among businesses and how a connected business community positively effects the county’s economic development through communicating how broadband and broadband-enabled tools allow businesses to increase efficiency, improve market access, reduce costs, and increase the speed of both transactions and interactions.

**Action Items**

1. Develop an awareness program: Methods of implementing a broadband awareness program include, but are not limited to, facilitating awareness sessions, press conferences led by community leaders, inviting a speaker to community business conferences or summits, and public service announcements.

2. Build awareness and cohesion: Facilitate the distribution of needs assessments, case studies, technology education resources, and success stories among local businesses, and work to develop an informal network of local business owners who have adopted broadband for business operations in order to provide a resource to field common questions and respond to issues within the community.

3. Identify support: Identify federally or state-sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture or Manufacturing extension) that includes assistance with broadband or IT content.

4. Develop local partnerships: Expand local partnerships with organizations such as the Delta County Chamber of Commerce, Intermediate School District, MI Works, main street program, or Community Anchor Institutions such as the Bay Community College or Escanaba Public library to expand on existing programs or develop programs that provide technology education.

5. Develop a training program: A training program or entry-level “Broadband 101” course should be developed to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT staff, such as how to use
commerce tools for sales, streamline finances with online records, or leverage knowledge management across an organization. Additional training might include:

a. “How to” training for key activities such as online collaboration, search optimization, cyber security, equipment use, and Web 2.0 tools.
b. Technical and professional support for hardware, software, and business operations.
c. Licenses for business applications such as document creation, antivirus and security software, and online-audio-and videoconferencing.
d. Website development and registration.
e. Basic communications equipment, such as low-cost personal computers and wireless routers.
f. Educate local businesses on Internet tools that are available at minimal or no cost to them.

Implementation Team: A team comprised of the champions of the Delta County Technology Planning Team is hosting tourism and professional development conference as well as free website and social media classes for the local businesses. Working with the Michigan Small Business Technology Development Center staff located in Escanaba, the team has already developed workshops.

Use – Economic Opportunity

Develop a Teleworker Support and Attraction Program
As broadband becomes an increasingly important tool for Michigan residents, a key economic opportunity for the state is emerging – Michiganders working from home through a broadband connection, commonly known as teleworking. Teleworking empowers Michigan workers to use their skills at businesses that can be across town or across the globe while allowing them to remain in their home communities. In addition, teleworking benefits Michigan businesses by helping employers attract and retain the best workers while reducing office occupancy and operating costs. Plus, communities also benefit from teleworking as it decreases traffic congestion, reduces CO2 emissions, and gives teleworkers more opportunities to remain active in their home neighborhoods. Several Michigan communities are looking to create a business environment that both supports the existing teleworker community in the area and attracts additional teleworkers in order to increase economic expansion.

Teleworking offers significant benefits to employers, employees, self-employed individuals, and entrepreneurs, in addition to developing the local economy. It also presents opportunities to secure wider social benefits - for example, by reducing the environmental impact of car travel. While not appropriate for all companies, teleworking can provide great perks for workers and a way to develop your community. An established and functioning telework program can also be a lifesaver in the event of a disaster or severe weather that limits employee mobility. It is
unlikely that all employees will be able to telework. A good way to start is to identify some types of positions or job types that can be performed remotely. Before fully implementing the policy, initiate a trial period and track results. Get feedback from managers and other employees as to the benefits and any challenges they are seeing, then fine-tune and possibly expand the program to best suit everyone's needs.

Goal:
Create a business environment that both supports the existing teleworker community in Delta County and attracts additional teleworkers in order to increase economic expansion.

Action Items:
1. Expand partnership with MI Works and its Trailing Spouse Network along with the Realtors in order to develop a program that supports a vibrant teleworking community.
2. Develop and present an educational packet that informs the local Realtors about teleworkers and the community’s broadband assets that support a vibrant teleworking community.
3. Create a business style “ambassador” program for those potential teleworkers looking to relocate to the community.

Implementation Team: To be determined.

Recommended Actions

ACCESS: Recommended Actions

Broadband Availability

1) Apply to USDA for Funding Support to Build out Broadband in Community
The USDA, through its Rural Development mission area, administers and manages housing, business, and community infrastructure and facility programs through a national network of state and local offices. The Rural Development program has an active portfolio of more than $165 billion in loans and loan guarantees. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers and improve the quality of life in rural areas.

Farm Bill Loan Program – USDA
This program is designed to provide loans for funding, on a technology neutral basis, for the costs of construction, improvement, and acquisition of facilities and equipment to provide broadband service to eligible rural communities.
Additional Information:
• Direct loans are in the form of a cost-of-money loan, a 4-percent loan, or a combination of the two.

Eligibility:
• Must be a rural area. Rural area means any area, as confirmed by the latest decennial census by the U.S. Census Bureau, which is not located within: (a) A city, town, or incorporated area that has a population of more than 20,000 people; or (b) An urbanized area contiguous and adjacent to a city or town with a population of more than 50,000 people. An urbanized area means a densely populated territory as defined in the latest decennial census.
• To be eligible for a broadband loan, an applicant may be either a nonprofit or for-profit organization, and must take one of the following forms: (1) Corporation; (2) Limited liability company (LLC); (3) Cooperative or mutual organization; (4) Federally recognized Indian tribe or tribal organization; or (5) State or local government, including any agency, subdivision, or one of their units.
• A service area may be eligible for a broadband loan if all of the following are true: (1) The service area is completely contained within a rural area; (2) At least 25 percent of the households in the service area are underserved households; (3) No part of the service area has three or more incumbent service providers; (4) No part of the funded service area overlaps with the service area of current RUS borrowers and grantees; (5) No part of the funded service area is included in a pending application before RUS seeking funding to provide broadband service.

Contact Information:
• Point of Contact: Ken Kuchno
  Telephone: (202) 690-4673
  E-mail: kenneth.kuchno@wdc.usda.gov
  Website: http://www.rurdev.usda.gov/utp_farmbill.html

Community Connect Program – USDA
Provides community access to broadband services in unserved areas through a one-time grant to such organizations as tribes, cooperatives, private companies, and universities, and uses the infrastructure built by the grant to create opportunities for continued improvement.

Additional Information:
• The funding will support construction, acquisition, or lease of facilities, including spectrum, to deploy broadband transmission services to all critical community facilities and to offer such services to all residential and business customers located within the proposed service area.
- The funding can be put towards the improvement, expansion, construction, acquisition, or leasing of a community center that furnishes free access to broadband Internet service, providing that the community center is open and accessible to area residents before, during, and after normal working hours and on Saturday or Sunday.
- All equipment purchases with grant and/or matching funds must be new or non-depreciated.

**Eligibility:**
- Must be single community with a population of less than 20,000 that does not have Broadband Transmission Service.
- Applicants must be organized as an incorporated organization, an Indian tribe or tribal organization, a state or local unit of government, or other legal entity, including cooperatives or private corporations or limited liability companies organized on a for-profit or not-for-profit basis.
- The project must deploy Basic Broadband Transmission Service, free of all charges for at least 2 years, to all Critical Community Facilities located within the proposed Service Area. Additionally, it should offer Basic Broadband Transmission Service to residential and business customers within the proposed Service Area.

**Contact Information:**
- Point of Contact: Thera Swersky or Steven Levine
  Telephone: (202) 690-4673.
  E-mail: community.connect@wdc.usda.gov
  Website: [http://www.rurdev.usda.gov/utp_commconnect.html](http://www.rurdev.usda.gov/utp_commconnect.html)

**Distance Learning and Telemedicine Loans and Grants Program – USDA**
Provides loans and grants to rural community facilities (e.g. schools, libraries, hospitals, and tribal organizations) for advanced telecommunications systems that can provide healthcare and educational benefits to rural areas.

**Additional Information:**
- The Distance Learning and Telemedicine Loans and Grant Program (DLT Program) provides three kinds of financial assistance: a full grant, grant-loan combination, and a full loan.

**Eligibility:**
To be eligible for a grant, your organization must:
- Currently deliver or propose to deliver distance learning or telemedicine services for the term of the grant. To receive a grant, the purposes must meet the grant definition of distance learning and telemedicine. The DLT program is focused on sustainability.
Planning studies, research projects, and short-term demonstration projects of less than two years will not be considered.

- Be legally organized as an incorporated organization or partnership; an Indian tribe or tribal organization; a state or local unit of government; a consortium; or other legal entity, including a private corporation organized on a for-profit or not-for-profit basis with the legal capacity to contract with the United States Government.
- Operate a rural community facility or deliver distance learning or telemedicine services to entities that operate a rural community facility or to residents of rural areas at rates calculated to ensure that the benefit of the financial assistance passes through to such entities or to residents of rural areas.

**Contact Information:**
- Point of Contact: Sam Morgan
  Telephone: (202) 720-0665
  E-mail: dltinfo@wdc.usda.gov
  Website: [http://www.rurdev.usda.gov/UTP_DLT.html](http://www.rurdev.usda.gov/UTP_DLT.html)

**Universal Service Rural Health Care Program – Universal Service Administration Company**
The Rural Health Care program supports healthcare providers serving rural communities by funding telecommunications services necessary for the provision of healthcare. The program is intended to ensure that rural healthcare providers pay no more for telecommunications in the provision of healthcare services than their urban counterparts.

**Additional Information:**
- Public and non-profit healthcare providers in rural areas can receive discounts on installation and monthly charges for telecommunications and Internet access service used for the provision of healthcare by using one of two methods: a mileage-based calculation, or a calculation of the “urban rate” to receive support equal to the difference between what they pay and what they would pay if they were receiving the service in any city in their state with a population of 50,000 or more.
- The rural healthcare provider must submit a form requesting services to the Universal Service Administrative Company (USAC). Once the form is approved, it is posted on USAC’s website seeking bids from telecommunications companies interested in providing the requested services. After the rural healthcare provider selects a provider from qualified bidders and USAC has approved the funding request, the services may begin. Support from the USF is then used to help pay for eligible services provided to the rural healthcare provider.

**Eligibility:**
Eligible organizations include:
• post-secondary educational institutions offering healthcare instruction, including teaching hospitals and medical schools;
• community health centers or health centers providing healthcare to migrants;
• local health departments or agencies;
• community mental health centers;
• not-for-profit hospitals;
• dedicated emergency departments in rural for-profit hospitals;
• rural healthcare clinics;
• part-time eligible entities located in facilities that are ineligible; and
• groups of healthcare providers consisting of one or more entities described above.

Contact Information:
• Telephone: (800) 229-5476
  E-mail: rhc-admin@usac.org
  Website: http://www.universalservice.org/rhc/default.aspx

2) Perform an Analysis of Local Policies and Ordinances
High capital investment costs, including permit processing, pole attachment costs, and lack of effective planning and coordination with public authorities, negatively impact the case for deployment. For example, the FCC’s National Broadband Plan concludes that, “the rates, terms, and conditions for access to rights of way [including pole attachments] significantly impact broadband deployment.” The costs associated with obtaining permits and leasing pole attachments and rights-of-way are some of the most expensive cost functions in a service provider’s plans to expand or upgrade service, especially in rural markets where the ration of poles to households goes off the charts. Furthermore, the process is time consuming. “Make ready” work, which involves moving wires and other equipment attached to a pole to ensure proper spacing between equipment, and compliance with electric and safety codes can take months to complete.

Community and provider collaboration to problem solve around local pole attachment and other right of way issues is one of the most effective opportunities to encourage faster, new deployment of infrastructure.

Goal:
Ensure that local policies are conducive to broadband build-out.

Benefits:
• Lowers cost barriers to improve the business case for broadband deployment.
• Encourages good public policy and provider relations.

Action Items:
• Review local policies, ordinances, and other barriers to broadband deployment and consult with community leaders, providers, utilities and other members of the community to ensure that they are supporting policies (local ordinances, pole attachments, right-of-way) that are conducive to broadband build out.

• Develop an awareness campaign targeted towards community leaders to inform them of the benefits of broadband to the entire community derived from access to global resources that outweigh the need for some policies.

**Broadband Speeds** – No Recommended Actions

**Broadband Competition**

3) Develop Public-Private Partnerships to Deploy Broadband Service

Public-private partnerships take many forms, limited only by the imagination and legal framework in which the municipality operates. Some communities issue municipal bonds to fund construction of a network, which they lease to private carriers, with the lease payments covering the debt service. Others create non-profit organizations to develop networks in collaboration with private carriers or provide seed investment to jumpstart construction of networks that the private sector is unable to cost-justify on its own.

A public-private partnership should not be simply seen as a method of financing. The strength of these partnerships is that each party brings something important to the table the other doesn’t have or can’t easily acquire. The community can offer infrastructure (publicly-owned building rooftops, light poles, towers, and other vertical assets for mounting infrastructure) for the deployment of the system, as well as committed anchor tenants. Private-sector partners bring network-building and operations experience.

**Goal:**

Fund broadband network deployment.

**Benefits:**

• The public sector transfers much of the risk for private investment. For example, the public sector has many funding tools available, including incentivizing continued investment through tax credits, encouraging greater availability of private capital through government guaranteed loans, or government being a direct source of capital through loans or grants.

• The partnership can aggregate demand and reduce barriers to deployment. By working together, public and private parties can educate and build awareness needed for the public to better integrate the use of broadband into their lives, thereby improving the business case for broadband deployment.

• A good partnership concentrates investment on non-duplicative networks and aims to ensure that all residents have access to adequate broadband service.
Action Items:
• Decide on the technology (e.g. cable, DSL, fiber, etc.).
• Issue an RFP.
• Develop a finance and ownership model.

4) Study and Possibly Reassess Major Telecom Purchase Contracts
Demand for broadband capacity across community institutions represents a key segment of the overall demand for broadband in many communities. The purchasing power of this collective should be leveraged to help promote greater competition in the broadband market and drive increased investment in backhaul and last mile broadband capacity.

Goal:
Leverage the demand for broadband across community institutions to promote competition and investment in broadband services.

Benefits:
• By aggregating demand within a local community, these institutions will be able to demonstrate to interested broadband providers existing pent-up demand and help justify private investments to bring greater capacity backhaul service to that community.
• The increased backhaul capacity can in turn benefit the whole community.

Action Items:
• Develop partnerships between local high-capacity demand institutions, including local civic leaders, government entities, public safety agencies, libraries, hospital or clinics, and schools, in a coordinated effort to aggregate local demand needs for increased broadband capacity and service.

Middle Mile Access – No Recommended Actions

Mobile Broadband Availability

5) Identify and Expand Wireless Hotspots in the Community
In order to maximize the benefits that wireless hotspots provide, a community must ensure there are an appropriate number of hotspots, along with a published inventory of the locations of each wireless hotspot.

Wireless hotspots are classified as free or fee. Hotspots are often found at restaurants, train stations, airports, libraries, hotels, hospitals, coffee shops, bookstores, fuel stations, department stores, supermarkets, RV parks and campgrounds, public pay phones, and other public places. Many universities and schools have wireless networks on their campuses as well.
Goal:
Expand wireless access to broadband.

Benefits:
- Wireless hotspots in the community are a benefit to local residents without broadband at home, as well as tourists traveling to the region.

Action Items:
- Develop a community Wi-Fi inventory.
- Conduct an analysis to identify key areas and organizations for the expansion of local wireless hotspots.
- The local chamber of commerce and tourism groups should promote the hotspots to ensure maximum visibility in the community.

6) Identify, Map, and Validate Broadband Demand
Develop a team to conduct research surveys and market analyses to validate a business case. A market analysis includes research on the existing and potential service offerings and the respective rates to determine the levels of interest in the services and rate plans offered by the client. The team should provide accurate, timely, and thorough solutions, accompanied by personalized service to meet the needs of communities or broadband providers.

Goals:
- Understand existing and potential markets for broadband subscribers (both residential and business).
- Several members of the Delta County Technology Planning Team are working with the Garden Peninsula Economic Task Force, and will be administering a broadband survey in order to better understand existing and potential markets for broadband subscribers in Garden Township. The team has determined a need to expand the scope of the survey to include all of Delta County in order to increase access to broadband in the unserved areas of Delta County.

Benefits:
- Enables the ability to better understand the key drivers of the broadband market.
- Validates the business case for network build-out and capacity investment.

Action Items:
1. The project team should be prepared to provide research project design, data collection services, data analysis and reporting, and presentation development and delivery.
2. Work with the members of the Delta County Technology Planning Team to develop a marketing survey and methods of implementation utilizing best practice plans and survey samples from other communities participating in the Connect Michigan Connected Community Engagement Program.
a. Survey mailing samples from the Charlevoix County and Oscoda County teams are readily available and currently loaded on the web portals of Delta County located on the Connect Michigan website www.connectmi.org
b. A sample of a press release is also loaded on the web portal of Delta County.

3. The project team should then tabulate the data. The survey results then can be placed on a public website for review by all the broadband providers who provide broadband service in Delta County. A best practice sample of similar survey results tabulated by the HARBOR Inc. Broadband Committee can be found on its website, http://www.harborinc.org/broadband.asp.

Implementation Team: A committee comprised of the Delta County Technology Planning Team and other volunteers from outside the team are currently developing a marketing survey and methods of implementation.

7) Complete a Vertical Assets Inventory
Wireless communications equipment can be placed in a wide variety of locations, but, ideally, wireless providers look for locations or structures in stable condition, with reasonably easy access to electricity and wired telecommunications, and with a significant height relative to the surrounding area. "Vertical assets" are defined as structures on which wireless broadband equipment can be mounted and positioned to broadcast a signal over as much terrain as possible. These assets include structures such as cell towers, water tanks, grain silos, and multi-story buildings.

The lack of easily accessible and readily usable information regarding the number and location of vertical assets prevents the expansion of affordable, reliable wireless broadband service. Wireless broadband providers must determine if it is worth the effort and expense to collect and analyze this data when making investment decisions. Public sector organizations are faced with the same challenges. A centralized and comprehensive vertical assets inventory can help wireless broadband providers expedite decisions regarding the deployment of affordable, reliable broadband service in rural areas.

Goal:
Develop a single repository of vertical assets, such as communications towers, water tanks, and other structures potentially useful for the support of deploying affordable, reliable wireless broadband in less populated rural areas or topographically challenged areas.

Benefits:
- The vertical assets inventory provides data for private and public investment decisions, lowering the initial cost of efforts needed to identify potential mounting locations for infrastructure.
- The inventory can encourage the expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.
Action Items:

- Identify or develop a vertical assets inventory toolkit to provide guidelines to identify structures or land that could serve as a site for installation of wireless communications equipment.
- Data to collect would include vertical asset type, owner type, minimum base elevation, minimum height above ground, and location.
- Identify and map elevated structures utilizing your community’s GIS resources. The resulting database should be open ended; localities should be encouraged to continuously map assets as they are made available.

8) Perform a Broadband Build-out Analysis in Unserved Areas

Conduct an onsite visual assessment of the defined geographic area seeking broadband coverage. The assessment determines the feasibility of deploying various Internet systems in a defined area. You should gather site specific information required for (i) determining use of existing infrastructure, (ii) designing wired and wireless Internet system using these assets, and (iii) expanding the broadband coverage in the defined area.

Wireless may be the best likely solution. To assist with that, you should conduct a visual assessment of the vertical assets (broadcast towers and water tanks) to determine the feasibility of deploying a fixed wireless broadband Internet system in the unserved community and to gather site-specific information required for that purpose.

Goal:
Determine which areas lack the necessary technological structure, and determine the feasibility of deploying various Internet systems in the defined area.

Benefits:
- Determines project feasibility and provides information to develop a business case for build-out.
- First step in providing unserved community residents with adequate broadband access.

Action Items:
Conduct a wireless assessment to include:
- Determining the functionality of all potential transmit locations
- Surveying the availability of adequate power sources at each location
- Identifying any issues regarding ingress and egress at each location
- Designing a wireless broadband system using these potential transmit locations
- Creating a methodology for the expansion of wireless broadband coverage into the unserved areas of the community
USE: RECOMMENDED ACTIONS

Digital Literacy

9) Distribute Digital Literacy Content
Leverage the abundant digital literacy content available online to distribute to local trainers. Currently, numerous non-profit organizations and for-profit corporations provide curriculum that can be adapted for classroom or self-paced study. Some organizations also provide additional resources for instructor use, including classroom setup information, teaching tips for each course, additional practice, test item files, and answers to frequently asked questions. Digital literacy content can be deployed via local websites (a community portal), print material, podcasts, blogs, and videos.

Additionally, your community could create a partnership between libraries, school systems, computer suppliers, and broadband providers to provide free training and discounted computers and broadband service to low-income community members who are not participating in the digital age. An example of such a program is Connected Nation’s Every Community Online program. This is an innovative program that is providing free digital literacy training, access to low-cost computers, and discounted broadband access to communities across the country.

Goal:
Facilitate partnerships in order to provide digital literacy training.

Benefits:
- Increasing the community’s digital literacy facilitates widespread online access to education and other public and government services, provides equal access to opportunities such as jobs and workforce training, enables people to find information about their health, and offers the opportunity to increase levels of social interaction and civic involvement.

Action Items:
- Develop partnerships with local organizations and equip them with digital literacy content;
- Train staff to deliver the curriculum to potential adopters;
- Promote local organizations as a source of broadband access and training;
- Engage non-adopters with a comprehensive public outreach campaign, helping them understand the benefits of broadband service and inviting them to experience the value at their libraries;
• Provide curriculum to teach computer and Internet use, as well as the skills required to utilize the Internet effectively for essential services, education, employment, civic engagement, and cultural participation;
• Offer compelling promotion to participants, giving them the opportunity to adopt the technology for everyday use in their homes.

10) Establish a "Community Technology Academy"
Develop a partnership between libraries, community centers, churches (places with computer labs for public use) and schools, community colleges and universities (places with subject matter experts) to develop a "Community Technology Academy.” Providers, local businesses, and community volunteers may be included to provide financial and/or in-kind support for the program. Academy curriculum should include basic training in areas such as "Introduction to Computers," "Internet Basics," social networking, using communication technologies, and the use of applications such as Microsoft Office, OpenOffice or Google Docs.

Goal:
Create a partnership to underscore a community's commitment to developing a tech-savvy workforce.

Benefits:
• Creates a more digitally literate and competent populace
• Develops community’s human capital

Action Items:
• Identify all organizations performing technology education and training services
• Identify all the organizations that have computer labs
• Compile a list of classes to be offered and developing content or leveraging content that is currently available at minimum or no cost from organizations such as Microsoft
• Determine what classes are currently being offered in the community
• Develop a collaborative and cooperative approach for operating the "Community Technology Academy" between all organizations

11) Develop a Technology Mentorship Program
Develop a program designed to recruit local high school or college students who excel in school and exhibit advanced leadership and technology skills to assist in technology training, technical support, and outreach efforts in their communities. Recognizing students as a powerful resource for local outreach efforts, the program will challenge them to extend their technology experiences beyond the classroom. The program essentially taps into a technology knowledge base that exists through these exceptional students. Students will be required to develop programs such as training seniors to use computers, initiating a computer refurbishing program, offering basic computer training for local communities, building websites, etc.
Goal:
Utilize student technology knowledge to implement community programs.

Benefits:
- The program helps students develop self-confidence and technical competencies as they work with their families, leaders, peers, neighbors, seniors, and other members of their communities. In addition to empowering these students with real-world experience, it helps enhance their skills as they mature into productive and highly competent citizens.
- It helps to build character by awarding students opportunities to give back to their communities and embrace responsibilities associated with community service.
- The program will engage students who are creative, knowledgeable, and interested in technology as a great resource for planning, implementation, support, and using technology at a local level. With guidance and support, they will help to provide a missing, and important, link between the members of community that have experience with broadband technology and those who are currently not using it.
- The program will expose students to potential career paths and provide a basis to determine if they want to further their educations in a technology field. It could also potentially provide a beginning client base from the relationships he or she has built within the community as a student.

12) Facilitate Internet Safety Classes
Some of the best ways to make sure community members are aware of how to navigate the Internet safely include instituting security-awareness training initiatives that include, but are not limited to, classroom style training sessions, security awareness website(s), helpful hints via e-mail, or even posters. These methods can help ensure that community members have a solid understanding of cyber threats. There are many risks, some more serious than others.

Among these dangers are viruses erasing entire systems, a hacker breaking into a system and altering files, someone using someone else’s computer to attack others, someone stealing credit card information, sexual predators making advances at children, and criminals making unauthorized purchases. Unfortunately, there's no 100% guarantee that even with the best precautions some of these things won't happen, but there are steps that can be taken to minimize the chances. Awareness training can also be used to alleviate anxiety for community members who are not using the Internet because of fear of cyber threats.

Goal:
Create a program designed to help community members who are using the Internet to identify and avoid situations that could threaten their safety, threaten business or government networks, compromise confidential information, compromise the safety of children, compromise their identities and financial information, or destroy their reputations.

Public Computer Centers – No Recommended Actions
**Broadband Awareness**

13) Facilitate a Technology Summit
Develop and host a technology summit for residents and businesses to increase awareness of broadband value, service options, and the potential impact on quality of life. The technology summit should facilitate community partnerships between leaders in local government and the private sector, including non-profits and private businesses in the education, healthcare, and agriculture sectors, with the goal of ensuring that residents have at least one place in the community to use powerful new broadband technologies, and that this asset will be sustained over time. Further, the technology summit should highlight success stories as evidence of the impact of technology.

**Goal:**
A technology summit should bring together community stakeholders to develop a dialogue about how public and private stakeholders can collectively improve broadband access, adoption, and use.

**Benefits:**
- Highlights successes, opportunities, and challenges regarding community technology planning.
- Develops ongoing dialogue around improving broadband access, adoption, and use.
- Unifies community stakeholders under one vision.

**Action Items:**
- Create community partnerships.
- Identify funding sources and hosts.
- Identify suitable speakers.
- Develop relevant content.

14) Develop a Countywide Technology Awareness Program
The vision of the Delta County Technology Planning Team is to create and sustain an educated community that can compete in today’s global economy. Its mission is to leverage existing resources, expand and enhance workforce-training programs, offer more community education, encourage more post-secondary education, and create additional awareness within Delta County with regard to technology and broadband. Technology will be expanded within each sector of the community: agriculture, business and industry, community-based organizations, government, healthcare, higher education, K-12 education, libraries and tourism, and parks and recreation. Awareness will be created to include the many available digital applications that deliver convenience, growth, productivity, and empowerment.
Goals:
1. Adopt an integrated approach to the organization, promotion, and delivery of technology education, training, and awareness for the community.
2. Implement training for security education.
3. Increase citizen usage of computers and the Internet.
4. Put together a media campaign to highlight the benefits of broadband technology.
5. Show marked improvement in basic computer skills and knowledge levels for residents.

Action Items:
1. Identify all organizations and related courses within Delta County currently offering community education, training, and awareness.
2. Divide the current resources offered by these organizations into categories: education, training, security and awareness, as well as classify them by the sectors that they benefit.
3. Create a media campaign to help consumers and businesses understand the benefits of high-speed services and the Internet.
4. Create new ways to market and promote opportunities to appropriate groups within the community.
5. Determine the areas that are lagging in education/training/awareness and identify appropriate community courses and materials needed to fill those gaps.

Implementation Team: To be determined.

Vulnerable Population Focus – No Recommended Actions

Economic Opportunity

15) Develop or Identify a Broadband Training and Awareness Program for Small and Medium Businesses
Methods of implementing a small and medium business broadband awareness program include, but are not limited to, facilitating awareness sessions, holding press conferences led by community leaders, inviting speakers to community business conferences or summits, and public service announcements. It is also important to educate local businesses about Internet tools that are available at minimum or no cost to them.

A training program, or entry-level “Broadband 101” course, could be utilized to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT staff, such as how to use commerce tools for sales, streamline finances with online records or leverage knowledge management across an organization. Additional training might include:
• “How to” training for key activities such as online collaboration, search optimization, cybersecurity, equipment use, and Web 2.0 tools.
- Technical and professional support for hardware, software, and business operations.
- Licenses for business applications such as document creation, antivirus and security software, and online audio- and videoconferencing.
- Website development and registration.
- Basic communications equipment, such as low-cost personal computers and wireless routers.

Goal:
Businesses adopt and use broadband-enabled applications, resulting in increased efficiency, improved market access, reduced costs, and increased speed of both transactions and interactions.

Benefits:
- Provides entrepreneurial support.
- Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
- Promotes business growth and workforce development.
- Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to Connected Nation’s 2012 Jobs and Broadband Report, businesses that are using the Internet bring in approximately $300,000 more in median annual revenues than their unconnected counterparts.

Action Items:
- Identify federally or state sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture, or Manufacturing extension) that include assistance with broadband or IT content.
- Identify or develop a business awareness and training program.
- Identify or develop online training modules for businesses. For example, the Southern Rural Development Center, in partnership with National Institute of Food and Agriculture, USDA, administers the National e-Commerce Extension Initiative. As the sole outlet nationally for e-Commerce educational offerings geared at Extension programming, the National e-Commerce Extension Initiative features interactive online learning modules. In addition, the program's website offers a library of additional resources and a tutorials section for greater explanation on website design and function. Modules and presentations include: A Beginner’s Guide to e-Commerce, Doing Business in the Cloud, Electronic Retailing: Selling on the Internet, Helping Artisans Reach Global Markets, and Mobile e-Commerce. [http://srdc.msstate.edu/ebeat/small_business.html#](http://srdc.msstate.edu/ebeat/small_business.html#)

Education
16) Improve Education through Digital Learning
Several digital learning platforms are available for K-12 implementation. For example, CFY is a national education nonprofit that helps students in low-income communities, together with their teachers and families, harness the power of digital learning to improve educational outcomes. The organization is unique in that it operates both “in the cloud” (through PowerMyLearning.com, a free K-12 online learning platform) and “on the ground” (through its Digital Learning Program, a whole school initiative that works hands-on with all three of the constituents that impact student achievement: teachers, parents, and students).

PowerMyLearning.com is a free online educational tool that helps students, teachers and parents locate and access over 1,000 high-quality online digital learning activities — videos, simulations, and other educational software — to propel student achievement in subjects including math, English, science, and social studies. The platform features a kid-friendly design. There is a playpoint/badge feature to help motivate students. In addition, students can rate digital learning activities and share them with friends via e-mail, Facebook, and Twitter. CFY also provides onsite training to teach teachers how to integrate PowerMyLearning into their classrooms.

Goal:
Increase student attention and engagement, and encourage students to take ownership of their learning and make it easier for teachers to differentiate instruction without embarrassing students.

Benefits:
- Increase learning time by extending learning beyond the classroom walls.
- Individualize learning and increase student engagement in school.
- Encourage self-directed learning.
- Enable parents to more effectively support their children at home.

Government

17) Improve Online Business Services Offered by the Government
Developing more e-Government applications not only provides value to businesses, but also allows the government to realize cost savings and achieve greater efficiency and effectiveness. Examples of activities include paying for permits and licensing, paying taxes, providing services to the government, and other operations.

Goal:
Build an e-Government solution that improves the ability of businesses to conduct business with the government over the Internet.
Benefits:

- Facilitates business interaction with government, especially for urban planning, real estate development, and economic development.
- e-Government lowers the cost to a business conducting all of its interaction with government. Further, as more businesses conduct their business with government online, their transaction costs will be lowered. The cost to a business for any interaction decreases as more technology and fewer staff resources are needed.
- e-Government provides a greater amount of information to businesses and provides it in a more organized and accessible manner.

Action Items:

- The first step in the process of providing e-Government services to constituents is developing a functional web portal that allows businesses to have access to resources easily. Such a portal can enable outside businesses looking for new opportunities to make informed decisions about working in a certain community.
- In addition, often overlooked in e-Government deployment are the issues of audiences and needs. Local governments must determine who will visit the website and what sort of information and services they will typically seek. A first step toward meeting general needs of constituents is to provide online access to as broad a swath of governmental information and data as is possible. The sort of information that should be included is:
  - Hours of operation and location of facilities.
  - Contact information of key staff and departments.
  - An intuitive search engine.
  - Access to documents (ideally a centralized repository of online documents and forms).
  - Local ordinances, codes, policies, and regulations.
  - Minutes of official meetings and hearings.
  - News and events.

18) Pursue Next Generation 911 Upgrades
The overall system architecture of Public Safety Answering Points (PSAPs) has essentially not changed since the first 911 call was made in 1968. These 911 systems are voice-only networks based on original wireline, analog, circuit-switched infrastructure that prevents easy transmission of data and critical sharing of information that can significantly enhance the decision-making ability, response, and quality of service provided to emergency callers. To meet growing public expectations of 911-system functionality (capable of voice, data, and video transmission from different types of communication devices), that framework should be replaced. This would require replacing analog phone systems with an Internet Protocol (IP)-based system. This system would provide an enabling platform for current technology, as well as future upgrades.
For example, in January 2013, the Federal Communications Commission proposed to amend its rules by requiring all wireless carriers and providers of “interconnected” text messaging applications to support the ability of consumers to send text messages to 911 in all areas throughout the nation where 911 Public Safety Answering Points (PSAPs) are also prepared to receive the texts (which requires an IP-based system). Text-to-911 will provide consumers with enhanced access to emergency communications in situations where a voice call could endanger the caller, or a person with disabilities is unable to make a voice call. In the near term, text-to-911 is generally supported as the first step in the transition to a Next Generation 911.

**Goal:**
Design a system that enables the transmission of voice, data, or video from different types of communication devices to Public Safety Answering Points (PSAPs) and onto emergency responder networks.

**Benefits:**
Transitioning to a “Next Generation” IP-based network will enable the public to make voice, text, or video emergency calls from any communications device. With Next Generation 911, responders and PSAPs will gain greater situational awareness, which will enable better-informed decisions resulting in better outcomes and, ultimately, a safer community. By capitalizing on advances in technologies, you are enabling:
- Quicker and more accurate information to responders
- Better and more useful forms of information
- More flexible, secure, and robust PSAP operations
- Lower capital and operating costs

**Action Steps:**
If you’re involved in PSAP decision making and are faced with replacing aging systems or purchasing new technology for the very first time, you need to consider what your most immediate requirements are and where you need to be 10 years from now. Your community can take a measured and practical approach that spreads the operational impact and costs of a Next Generation 911 transition over time. Your local agency should choose a starting point that makes the most sense and provides immediate benefits for their PSAP, responders, and communities they serve. For example, according to Intrado, Inc., a provider of 911 and emergency communications infrastructure to over 3,000 public safety agencies, local public-safety agencies can implement any of the following next-generation 911 components today, and provide immediate benefits with little to no disruption of current operations:
- A public-safety-class, IP-based network
- IP-based call processing equipment (CPE) in public-safety answering points (PSAPs)
- Geographic information system (GIS) data enhancements
- Advanced 911 data capabilities and applications
Healthcare

19) Promote Telemedicine in Remote Areas
Promote the delivery of healthcare services from a distance using video-based technologies. Telemedicine can help to address challenges associated with living in sparsely populated areas and having to travel long distances to seek medical care - particularly for patients with chronic illnesses. It also addresses the issue of the lack of medical specialists in remote areas by awarding access to specialists in major hospitals situated in other cities, states, or countries. While telemedicine can be delivered to patient homes, it can also be implemented in partnership with local clinics, libraries, churches, schools or businesses that have the appropriate equipment and staff to manage it. The most critical steps in promoting telemedicine are ensuring that patients and medical professionals have access to broadband service, understand the main features of telemedicine, are aware of the technologies required for telemedicine, and understand how to develop, deliver, use, and evaluate telemedicine services.

One relevant funding opportunity includes Distance Learning and Telemedicine Loans and Grants Program. USDA provides loans and grants to rural community facilities (e.g. schools, libraries, hospitals, and tribal organizations) for advanced telecommunications systems that can provide healthcare and educational benefits to rural areas. Three kinds of financial assistance are available: a full grant, grant-loan combination, and a full loan.

Goal:
Deliver improved healthcare services to rural residents.
APPENDIX 1: STATEWIDE PERSPECTIVE OF BROADBAND

Statewide Infrastructure

As part of the Michigan State Broadband Initiative (SBI), and in partnership and at the direction of the Michigan Public Service Commission (MPSC) Connect Michigan produced an inaugural map of broadband availability in spring 2010. The key goal of the map was to highlight communities and households that remain unserved or underserved by broadband service; this information was essential to estimating the broadband availability gap in the state and understanding the scope and scale of challenges in providing universal broadband service to all citizens across the state. Since the initial map’s release, Connect Michigan has collected and released new data every six months, with updates in October and April annually.

The most current statewide and county-specific broadband inventory maps released in the fall of 2012 depict a geographic representation of provider-based broadband data represented by cable, DSL, fiber-to-the-home, fixed wireless, and mobile wireless services. These maps also incorporate data such as political boundaries and major transportation networks in the state. Statewide maps can be found at: http://www.connectmi.org/mapping/state. And the county maps can be found at: http://www.connectmi.org/ecommunity_strategies/find_your_county/michigan/emmet.

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<th>Served Households ('000)</th>
<th>Percent Households by Speed Tier</th>
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Source: Connect Michigan, November 2012
Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile and satellite service) across the state of Michigan; it presents the number and percentage of unserved and served households by speed tiers. The total number of households in Michigan, based on the 2010 Census, is 3,872,508, for a total population of 9,883,640 people. Table 1 indicates that 98.71% of households are able to connect to basic broadband at speeds of at least 768 Kbps download/200 Kbps upload. This implies that the number of households originally estimated by Connect Michigan to be unserved has dropped from 121,701 households in the fall of 2010 to 49,916 households in the fall of 2012. Further, approximately 96.45% of households across Michigan have broadband available of at least 3 Mbps download/768 Kbps upload speeds. The percentage of Michigan households having fixed broadband access available of at least 6 Mbps download/1.5 Mbps upload speeds is estimated at 91.77%.

Taking into account both fixed and mobile broadband service platforms, an estimated 99.91% of Michigan households have broadband available from at least one provider at speeds of 768 Kbps download/200 Kbps upload or higher. This leaves 3,652 households in the state completely unserved by any form of terrestrial broadband (including mobile, but excluding satellite services).

As differences in broadband availability estimates between the fall of 2010 and the fall of 2012 show, additional participating broadband providers can have a large impact upon Michigan broadband mapping inventory updates. Further, the measured broadband inventory provides an estimate of the true extent of broadband coverage across the state. There is a degree of measurement error inherent in this exercise, which should be taken into consideration when analyzing the data. This measurement error will decrease as local, state, and federal stakeholders identify areas where the displayed coverage is underestimated or overestimated. Connect Michigan welcomes such feedback to be analyzed in collaboration with broadband providers to correct errors identified in the maps.

In addition, the broadband availability data collected, processed, and aggregated by Connect Michigan has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Michigan’s broadband availability estimates reported by the NTIA and the FCC in the National Map. The National Broadband Map can be found here: http://www.broadbandmap.gov and the specific page for analyzing Michigan’s data can be found here: http://www.broadbandmap.gov/summarize/state/michigan.

**Interactive Map**

Connect Michigan provides My ConnectView™, an online tool, developed and maintained by Connected Nation, intended to allow users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers Michigan’s citizens to take an active role in seeking service, upgrading service, or simply
becoming increasingly aware of what broadband capabilities and possibilities exist in their area, city, county, or state. My ConnectView is available at: http://www.connectmi.org/interactive-map.

For additional maps and other related information, visit: http://www.connectmi.org/community_profile/find_your_county/michigan/marquette

**Business and Residential Technology Assessments**

To complement the broadband inventory and mapping data, Connect Michigan periodically conducts statewide residential and business technology assessments to understand broadband demand trends and across the state. The purpose of this research is to better understand the drivers and barriers to technology and broadband adoption and estimate the broadband adoption gap across the state of Michigan. Key questions the data address are: who, where, and how are households in Michigan using broadband technology? How is this technology impacting Michigan households and residents? And, who is not adopting broadband service and why? What are the barriers that prevent citizens from embracing this empowering technology?

Through Connect Michigan’s research, many insights have been able to be collected. The 2012 Residential Technology Assessment revealed the following key findings:

- **Statewide, 71% of Michigan residents subscribe to home broadband service.** Even though this represents a 10 percentage point gain from 2011, it means that more than 2.1 million Michigan adults still do not subscribe to home broadband service.
- Despite the statewide growth in home broadband adoption, not all Michigan residents are subscribing at the same rate. African Americans, rural Michiganders, low-income households, and adults with disabilities are all less likely to subscribe to home broadband service.
- Broadband empowers Michigan workers to search for jobs or find better jobs. Statewide, **40% of Michigan Internet users search for jobs online**, including 55% of low-income Internet users.
- Mobile broadband is growing in popularity across Michigan – **nearly one-half of Michigan adults (47%) use mobile broadband service**, up from 36% just a year ago.

Additionally, an assessment on technology in businesses released in the spring of 2013 in a report titled *Broadband’s Economic Impact in Michigan* revealed the following key findings:

- Connect Michigan estimates that a **one percentage point increase** in broadband penetration could create or save approximately **12,388** jobs statewide.
- Michigan residents conduct **17.1 million** online transactions with Michigan businesses and spend nearly **$1.1 billion** in online sales with these businesses annually.
- Approximately **1.16 million** Michigan residents take advantage of the Internet to sell goods
or services through home-based businesses, through individual online sales, and via auctions. This accounts for $467 million in annual revenue statewide.

- Approximately 732,000 employed Michigan residents are teleworkers. Statewide, teleworkers save $362.8 million in car maintenance and fuel.
- Statewide, 804,000 Michigan e-Learners report that they have some college education but have not yet earned a bachelor’s degree. Census estimates suggest if these Michigan residents use online learning to earn their bachelor’s degrees, they could bring in a total of $3.8 billion in additional household income to the state.

For more information on the statewide information described, visit the Connect Michigan website at [http://www.connectmi.org/research](http://www.connectmi.org/research).
APPENDIX 2: PARTNER AND SPONSORS

Connect Michigan, in partnership with the Michigan Public Service Commission, supports Michigan’s reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by Michigan residents. In 2009, Connect Michigan partnered with the Michigan Public Service Commission to engage in a comprehensive broadband planning and technology initiative as part of the national effort to map and expand broadband. The program began by gathering provider data to form a statewide broadband map, and has progressed to the planning and development stage. At this point the program is expanding to include community engagement in local technology planning, identification of opportunities with existing programs, and implementation of technology projects designed to address digital literacy, improve education, give residents access to global Internet resources, and stimulate economic development.

http://www.connectmi.org

Michigan Public Service Commission (MPSC) is the lead Michigan agency for the State Broadband Initiative that is responsible for working with Connect Michigan, overseeing the Michigan initiative, and providing direction of the project. The MPSC facilitates interactions with other state government entities, broadband providers, and other Michigan stakeholders. It views promoting Connect Michigan activities as complementary to its mission to “grow Michigan’s economy and enhance the quality of life of its communities by assuring safe and reliable energy, telecommunications, and transportation services at reasonable rates.”

http://www.michigan.gov/mpsc

Connected Nation (Connect Michigan’s parent organization) is a leading technology organization committed to bringing affordable high-speed Internet and broadband-enabled resources to all Americans. Connected Nation effectively raises the awareness of the value of broadband and related technologies by developing coalitions of influencers and enablers for improving technology access, adoption, and use. Connected Nation works with consumers, community leaders, states, technology providers, and foundations, including the Bill & Melinda Gates Foundation, to develop and implement technology expansion programs with core competencies centered on a mission to improve digital inclusion for people and places previously underserved or overlooked.

http://www.connectednation.org
National Telecommunications and Information Administration (NTIA) is an agency of the United States Department of Commerce that is serving as the lead agency in running the State Broadband Initiative (SBI). Launched in 2009, the NTIA’s State Broadband Initiative (SBI) implements the joint purposes of the Recovery Act and the Broadband Data Improvement Act, which envisioned a comprehensive program, led by state entities or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into state and local economies. Economic development, energy efficiency, and advances in education and healthcare rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure.

The NTIA has awarded a total of $293 million for the SBI program to 56 grantees, one each from the 50 states, 5 territories, and the District of Columbia, or their designees. Grantees such as Connect Michigan are using this funding to support the efficient and creative use of broadband technology to better compete in the digital economy. These state-created efforts vary depending on local needs but include programs to assist small businesses and community institutions in using technology more effectively, developing research to investigate barriers to broadband adoption, searching out and creating innovative applications that increase access to government services and information, and developing state and local task forces to expand broadband access and adoption.

Since accurate data is critical for broadband planning, another purpose of the SBI program is to assist states in gathering data twice a year on the availability, speed, and location of broadband services, as well as the broadband services used by community institutions such as schools, libraries, and hospitals. This data is used by the NTIA to update the National Broadband Map, the first public, searchable nationwide map of broadband availability launched February 17, 2011.
APPENDIX 3: THE NATIONAL BROADBAND PLAN

The National Broadband Plan, released in 2010 by the Federal Communications Commission, has the express mission of creating a high-performance America—a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications. The plan seeks to ensure that the entire broadband ecosystem—networks, devices, content and applications— is healthy.

The plan recommends that the country adopt and track the following six goals to serve as a compass over the next decade:

GOAL No. 1: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.

GOAL No. 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.

GOAL No. 3: Every American should have affordable access to robust broadband service and the means and skills to subscribe if they so choose.

GOAL No. 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.

GOAL No. 5: To ensure the safety of the American people, every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.

GOAL No. 6: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

To learn more, visit www.broadband.gov.
APPENDIX 4: WHAT IS CONNECTED?

The goal of Connect Michigan’s Connected program is to certify that each community that participates in the program has, in some relevant manner, addressed their community’s need for improved Access, Adoption, and Use of technology by assessing community technological resources, identifying gaps, and working to fill those gaps:

- **ACCESS** – Is Broadband infrastructure available to all residents?
- **ADOPTION** – Do residents use the technologies?
- **USE** – Are residents using technology to improve their quality of life?

**Connected Certification Process**

The Connected certification process consists of a 4-step process to community certification:

**Step 1: Create a community technology team.** Facilitate kickoff meetings and program orientation with regional leaders and community champions. Provide them with tools and resources to form a community team. This team will be represented by local leaders from key community sectors, including:
• Broadband Provider Community
• Government: General, Public Safety, Energy and Environment
• Economic Opportunity: Economic Development, Business Development, Tourism
• Agriculture
• Education: K-12, Higher Education
• Libraries
• Healthcare

**Step 2: Perform a technology assessment.** With support provided by a planning specialist, Connect Michigan will provide communities with tools (electronic or print depending on the community needs) to benchmark local community technology. Bolstered by benchmarking data that had been gathered through Connect Michigan’s mapping and market research, the Delta County Technology Planning Team will work with community members to determine their overall broadband and technology grade on a 13-point “community certification AAU” model:

1. Broadband Availability
2. Broadband Speeds
3. Broadband Competition
4. Middle Mile Access
5. Mobile Broadband Availability
6. Digital Literacy
7. Public Computer Centers
8. Broadband Awareness
9. Vulnerable Population Focus
10. Economic Opportunity
11. Education
12. Government
13. Healthcare

**Step 3: Action Planning & Implementation.** Following Community Assessments, the data is analyzed, gaps will be determined, and recommended actions to help to fill gaps will be identified. After successful execution of projects the community will be certified as a Connected Community.

**Step 4: Project Success and Expanded Local Empowerment.** Once a community is certified, the community will have an avenue to discuss its success and pursue opportunities as a recognized, technologically advanced community.
APPENDIX 5: GLOSSARY OF TERMS

#
3G Wireless - Third Generation - Refers to the third generation of wireless cellular technology. It has been succeeded by 4G wireless. Typical speeds reach about 3 Mbps.
4G Wireless - Fourth Generation - Refers to the fourth generation of wireless cellular technology. It is the successor to 2G and 3G. Typical implantations include LTE, WiMax, and others. Maximum speeds may reach 100 Mbps, with typical speeds over 10 Mbps.

A
ADSL - Asymmetric Digital Subscriber Line - DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.
ATM - Asynchronous Transfer Mode - A data service offering by ASI that can be used for interconnection of customers’ LAN. ATM provides service from 1 Mbps to 145 Mbps utilizing Cell Relay Packets.

B
Bandwidth - The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.
BIP - Broadband Infrastructure Program - Part of the American Recovery and Reinvestment Act (ARRA), BIP is the program created by the U.S. Department of Agriculture focused on expanding last mile broadband access.
Bit - A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1,000,000 bits.
BPL - Broadband Over Powerline - An evolving theoretical technology that provides broadband service over existing electrical power lines.
BPON - Broadband Passive Optical Network - A point-to-multipoint fiber-lean architecture network system which uses passive splitters to deliver signals to multiple users. Instead of running a separate strand of fiber from the CO to every customer, BPON uses a single strand of fiber to serve up to 32 subscribers.
Broadband - A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services (e.g. DSL, cable Internet).
BTOP - Broadband Technology Opportunities Program - Part of the American Recovery and Reinvestment Act (ARRA), BTOP is the program created by the U.S. Department of Commerce
focused on expanding broadband access, expanding access to public computer centers, and improving broadband adoption.

**C**

**Cable Modem** - A modem that allows a user to connect a computer to the local cable system to transmit data rather than video. It allows broadband services at speeds of five Mbps or higher.

**CAP - Competitive Access Provider** - (or “Bypass Carrier”) A company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.

**Cellular** - A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.

**CLEC - Competitive Local Exchange Carrier** - Wireline service provider that is authorized under state and federal rules to compete with ILECs to provide local telephone and Internet service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it, or c) by leasing discreet parts of the ILEC network referred to as UNEs.

**CMTS - Cable Modem Termination System** - A component (usually located at the local office or head end of a cable system) that exchanges digital signals with cable modems on a cable network, allowing for broadband use of the cable system.

**CO - Central Office** - A circuit switch where the phone and DSL lines in a geographical area come together, usually housed in a small building.

**Coaxial Cable** - A type of cable that can carry large amounts of bandwidth over long distances. Cable TV and cable modem broadband service both utilize this technology.

**Community Anchor Institutions (CAI)** - Institutions that are based in a community and larger user of broadband. Examples include schools, libraries, healthcare facilities, and government institutions.

**CWDM - Coarse Wavelength Division Multiplexing** - Multiplexing (more commonly referred to as WDM) with less than 8 active wavelengths per fiber.

**D**

**Dial-Up** - A technology that provides customers with access to the Internet over an existing telephone line. Dial-up is much slower than broadband.

**DLEC - Data Local Exchange Carrier** - DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, Northpoint, and Rhythms.

**Downstream** - Data flowing from the Internet to a computer (surfing the net, getting e-mail, downloading a file).

**DSL - Digital Subscriber Line** - The use of a copper telephone line to deliver “always on” broadband Internet service.
DSLAM - Digital Subscriber Line Access Multiplier - A piece of technology installed at a telephone company’s CO that connects the carrier to the subscriber loop (and ultimately the customer’s PC).

DWDM - Dense Wavelength Division Multiplexing - A SONET term which is the means of increasing the capacity of Sonet fiber-optic transmission systems.

E-rate - A federal program that provides subsidy for voice and data lines to qualified schools, hospitals, Community-Based Organization (CBOs), and other qualified institutions. The subsidy is based on a percentage designated by the FCC.

Ethernet - A local area network (LAN) standard developed for the exchange data with a single network. It allows for speeds from 10 Mbps to 10 Gbps.

EON - Ethernet Optical Network - The use of Ethernet LAN packets running over a fiber network.

EvDO - Evolution Data Only - A new wireless technology that provides data connections that are 10 times faster than a regular modem.

FCC - Federal Communications Commission - A federal regulatory agency that is responsible for, among other things, regulating VoIP.

Fixed Wireless Broadband - The operation of wireless devices or systems for broadband use at fixed locations such as homes or offices.

Franchise Agreement - An agreement between a cable provider and a government entity that grants the provider the right to serve cable and broadband services to a particular area - typically a city, county, or state.

FTTH - Fiber To The Home - Another name for fiber to the premises, where fiber optic cable is pulled directly to an individual’s residence or building allowing for extremely high broadband speeds.

FTTN - Fiber To The Neighborhood - A hybrid network architecture involving optical fiber from the carrier network, terminating in a neighborhood cabinet that converts the signal from optical to electrical.

FTTP - Fiber To The Premise (Or FTTB – Fiber To The Building) - A fiber optic system that connects directly from the carrier network to the user premises.

Gbps - Gigabits per second - 1,000,000,000 bits per second or 1,000 Mbps. A measure of how fast data can be transmitted.

GPON - Gigabyte-Capable Passive Optical Network - Uses a different, faster approach (up to 2.5 Gbps in current products) than BPON.

GPS - Global Positioning System - A system using satellite technology that allows an equipped user to know exactly where he is anywhere on earth.
**GSM - Global System for Mobile Communications** - This is the current radio/telephone standard in Europe and many other countries except Japan and the United States.

**H**
**HFC - Hybrid Fiber Coaxial Network** - An outside plant distribution cabling concept employing both fiber optic and coaxial cable.
**Hotspot** - See Wireless Hotspot.

**I**
**IEEE** - Institute of Electrical and Electronics Engineers (pronounced “Eye-triple-E.”).
**ILEC - Incumbent Local Exchange Carrier** - The traditional wireline telephone service providers within defined geographic areas. They typically provide broadband Internet service via DSL technology in their area. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs.
**IP-VPN - Internet Protocol - Virtual Private Network** - A software-defined network offering the appearance, functionality, and usefulness of a dedicated private network.
**ISDN - Integrated Services Digital Network** - An alternative method to simultaneously carry voice, data, and other traffic, using the switched telephone network.
**ISP - Internet Service Provider** - A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem, and DSL services.

**K**
**Kbps - Kilobits per second** - 1,000 bits per second. A measure of how fast data can be transmitted.

**L**
**LAN - Local Area Network** - A geographically localized network consisting of both hardware and software. The network can link workstations within a building or multiple computers with a single wireless Internet connection.
**LATA - Local Access and Transport Areas** - A geographic area within a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access service. Calls between LATAs are often thought of as long-distance service. Calls within a LATA (IntraLATA) typically include local and local toll telephone services.
**Local Loop** - A generic term for the connection between the customer’s premises (home, office, etc.) and the provider’s serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.
**Low Income** - Low income is defined by using the poverty level as defined by the U.S. Census Bureau. A community’s low-income percentage can be found at [www.census.gov](http://www.census.gov).

**M**
**MAN - Metropolitan Area Network** - A high-speed date intra-city network that links multiple locations with a campus, city, or LATA. A MAN typically extends as far as 50 kilometers (or 31 miles).

**Mbps - Megabits per second** - 1,000,000 bits per second. A measure of how fast data can be transmitted.

**Metro Ethernet** - An Ethernet technology-based network in a metropolitan area that is used for connectivity to the Internet.

**Multiplexing** - Sending multiple signals (or streams) of information on a carrier (wireless frequency, twisted pair copper lines, fiber optic cables, coaxial, etc.) at the same time. Multiplexing, in technical terms, means transmitting in the form of a single, complex signal and then recovering the separate (individual) signals at the receiving end.

**NTIA** - National Telecommunications and Information Administration, which is housed within the United State Department of Commerce.

**NIST** - National Institute of Standards and Technology.

**Overbuilders** - Building excess capacity. In this context, it involves investment in additional infrastructure projects to provide competition.

**OVS - Open Video Systems** - A new option for those looking to offer cable television service outside the current framework of traditional regulation. It would allow more flexibility in providing service by reducing the build-out requirements of new carriers.

**PON - Passive Optical Network** - A Passive Optical Network consists of an optical line terminator located at the Central Office and a set of associated optical network terminals located at the customer’s premises. Between them lies the optical distribution network comprised of fibers and passive splitters or couplers.

**Right-of-Way** - A legal right of passage over land owned by another. Carriers and service providers must obtain right-of-way to dig trenches or plant poles for cable and telephone systems and to place wireless antennae.

**RPR - Resilient Packet Ring** - Uses Ethernet switching and a dual counter-rotating ring topology to provide SONET-like network resiliency and optimized bandwidth usage, while delivering multi-point Ethernet/IP services.

**RUS - Rural Utility Service** - A division of the United States Department of Agriculture that promotes universal service in unserved and underserved areas of the country through grants, loans, and financing.
Satellite - Satellite brings broadband Internet connections to areas that would not otherwise have access, even the most rural of areas. Historically, higher costs and lower reliability have prevented the widespread implementation of satellite service, but providers have begun to overcome these obstacles, and satellite broadband deployment is increasing. A satellite works by receiving radio signals sent from the Earth (at an uplink location also called an Earth Station) and resending the radio signals back down to the Earth (the downlink). In a simple system, a signal is reflected, or "bounced," off the satellite. A communications satellite also typically converts the radio transmissions from one frequency to another so that the signal getting sent down is not confused with the signal being sent up. The area that can be served by a satellite is determined by the "footprint" of the antennas on the satellite. The "footprint" of a satellite is the area of the Earth that is covered by a satellite's signal. Some satellites are able to shape their footprints so that only certain areas are served. One way to do this is by the use of small beams called "spot beams." Spot beams allow satellites to target service to a specific area, or to provide different service to different areas.

SBI - State Broadband Initiatives, formerly known as the State Broadband Data & Development (SBDD) Program.
SONET - Synchronous Optical Network - A family of fiber-optic transmission rates.
Streaming - A Netscape innovation that downloads low-bit text data first, then the higher bit graphics. This allows users to read the text of an Internet document first, rather than waiting for the entire file to load.
Subscribership - Subscribership is the number of customers that have subscribed for a particular telecommunications service.
Switched Network - A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements.

T
T-1 - Trunk Level 1 - A digital transmission link with a total signaling speed of 1.544 Mbps. It is a standard for digital transmission in North America.
T-3 - Trunk Level 3 - 28 T1 lines or 44.736 Mbps.

U
UNE - Unbundled Network Elements - Leased portions of a carrier’s (typically an ILEC’s) network used by another carrier to provide service to customers.
Universal Service - The idea of providing every home in the United States with basic telephone service.
Upstream - Data flowing from your computer to the Internet (sending e-mail, uploading a file).

V
VDSL (or VHDSL) - Very High Data Rate Digital Subscriber Line - A developing technology that employs an asymmetric form of ADSL with projected speeds of up to 155 Mbps.
**Video On Demand** - A service that allows users to remotely choose a movie from a digital library and be able to pause, fast-forward, or even rewind their selection.

**VLAN - Virtual Local Area Network** - A network of computers that behave as if they were connected to the same wire even though they may be physically located on different segments of a LAN.

**VoIP - Voice over Internet Protocol** - A new technology that employs a data network (such as a broadband connection) to transmit voice conversations.

**VPN - Virtual Private Network** - A network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable one to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.

**Vulnerable Groups** - Vulnerable groups will vary by community, but typically include low-income, minority, senior, children, etc.

**W**

**WAN - Wide Area Network** - A communications system that utilizes cable systems, telephone lines, wireless, and other means to connect multiple locations together for the exchange of data, voice, and video.

**Wi-Fi - Wireless Fidelity** - A term for certain types of wireless local networks (WLANs) that uses specifications in the IEEE 802.11 family.

**WiMax** - A wireless technology that provides high-throughput broadband connections over long distances. WiMax can be used for a number of applications, including last mile broadband connections, hotspots, and cellular backhaul and high-speed enterprise connectivity for businesses.

**Wireless Hotspot** - A public location where Wi-Fi Internet access is available for free or for a small fee. These could include airports, restaurants, hotels, coffee shops, parks, and more.

**Wireless Internet** - 1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.

**Wireline** - Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground, or on telephone poles.